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HEADQUARTERS FOR
INFORMATION SIN

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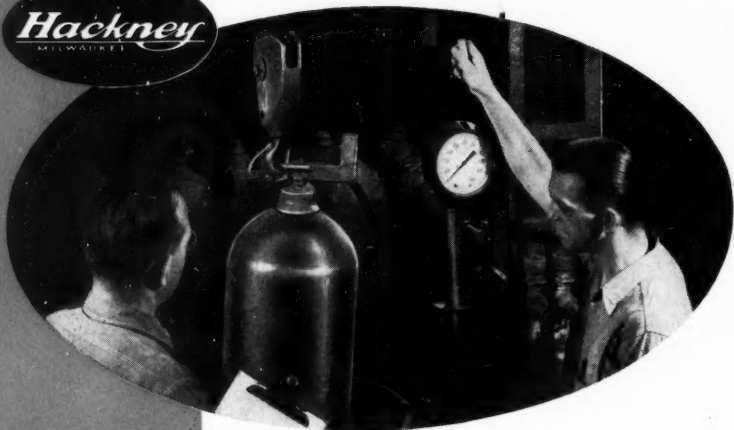
We're not posing as seers — just as specialists in producing and marketing the highest quality butane and propane — but we're hoping for you a great year in '52. We might be able to help, if you talk to us before making your new contracts. You know, Anchor sells wholesale only — your dependable supplier, but NEVER your competitor.

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JANUARY, 1952 — 50c per Copy

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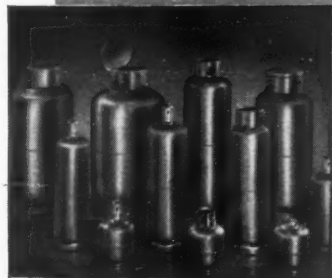
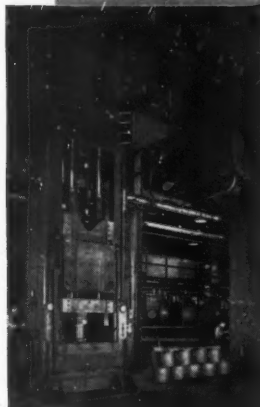
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JANUARY, 1952

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Publication Office

Los Angeles (4)—198 So. Alvarado St.
Phone DUnkirk 7-4337

Branch Offices

New York (18)—11 W. 42nd St.
Raymond M. Schuster, District Mgr.
Phone CH 4-1969

Chicago (3)—1064 Peoples Gas Bldg.
David Carmen, District Mgr.
Phone WABash 2-2589

Cleveland (15)—1836 Euclid Ave.
James K. Gillam, District Mgr.
Phone PRospect 1-4584

Tulsa—P. O. Box 4055
Craig Espy, District Mgr.
Phones: Bus.—2-2414; Res.—7-9807

•

Lynn C. Denny, Executive Editor

Carl Abell, Editor

Lester L. Luxon, Technical Editor

Barbara Hall, Editorial Assistant

O. D. Hall, Mid-Continental Editor

Raymond A. Grote, Art Editor

•

Jay Jenkins, President and Publisher

Paul Lady, General Manager

D. Newlon, Advertising Manager

C. F. Kamin, Circulation Manager

Gene Masters, Research

•

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BUTANE-PROPANE News

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Letters

HEADQUARTERS FOR LP-GAS INFORMATION SINCE 1931

ALBERTA, CANADA

Throughout the industry in this Province there is quite a controversy as to the advantage of utilizing two-stage regulation (as against single-stage) in ordinary domestic or commercial installations to obviate freeze-up during sub-zero weather which occasionally reaches 30 to 45°.

Have you any experience from the industry in the Northern border states which might be used as a guide in this matter?

N.E.H.

Some companies have found that two-stage regulation has reduced their regulator "freeze-up" troubles. It is not a sure cure, however. Some other factors which help reduce regulator freeze-up troubles are:

1. Larger regulators, with their larger orifices are less susceptible to freezing.
2. Large size connectors (pigtailes) help reduce freeze-up troubles.
3. Care in installing regulators and connectors so that a gradual slope toward the tank valve, without pockets, is maintained between the tank valve and the regulator orifice is helpful.
4. Small dehydrator cylinders for installation in the cylinder or tank outlet line are available and help remove moisture before it reaches the regulator.—Ed.

WISCONSIN

We would like to know how much we should plane down the heads on a 1950 6-cylinder Ford truck and an L-152 International truck to use just propane gas. Also please advise if we should pur-

chase a different manifold or if we could use the same one. Any additional information you could give us in regards to this would be greatly appreciated.

F.H.C.W.

Ford makes two 6-cylinder truck engines. If the one you mentioned is the 226 cu. in. model, the head may be planed .066", giving a ratio of 7.5:1. If the engine is the 254 cu. in. model, the substitution of the regular head from the 226 engine will give a ratio of 7.4:1. Or the regular head of the larger engine may be planed as indicated above.

It will probably be necessary to deepen the cells over the piston domes to provide clearance.

The International Harvester Co. recommends installation of 10,000-ft. altitude pistons for high compressioning their engines. None of our catalogs show a propane manifold for the L-152 engine, but this does not prove that there are none available. You might have a source. The engine should have a cold manifold. You can rework the present manifolds on this job and the Ford by taking them apart, milling off the hot box portions where the intake and exhaust are joined, and closing the channels of the exhaust with a thick plate, either welded on or bolted down on a heavy asbestos gasket.—Ed.

WASHINGTON

Is there any chart available that will tell me the gas consumption of

● BUTANE-PROPANE NEWS welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed by them.—Editor.

a burner using a specified orifice size at a specified number of pounds per square inch? For instance: I have a 35,000 Btu orifice burner at 60 pounds per square inch. What would the consumption of L. P. gas be?

M.P.B.

Several industrial type burner manufacturers publish orifice capacity charts for both low pressures and high pressures. Such charts are generally for a certain specific gravity gas, but conversion constants for other gases are usually given.

You can also use the orifice formula on p. 194 of the Handbook Butane-Propane Gases. When the pressures are given in pounds per square inch, they must be multiplied by 28 to convert them to inches of water for use in the formula.—Ed.

INDIANA

I am not so sure I know how to correct propane to 60°F as Pamphlet 58 directs. Would you give me some actual problems on 500, 1000, and 1200-gal. tanks. I need to assure myself and also be able to show others.

M.D.B.

The procedure for correcting a volume of propane at a given temperature to its volume at 60°F is the same for any of the tank sizes which you mention.

It is necessary to know the following three values before the correction can be calculated: volume of liquid in the tank, its temperature, and its *specific gravity* (not API gravity).

You probably have no equipment with which to determine the specific gravity, but all LP-Gas producers do have and they generally include the specific gravity of the LP-Gas which they ship on their invoices or shipping manifests. Therefore, you should be able to determine, at least approximately, the specific gravity of the liquid propane in the tank.

Let us assume as an example that a tank contains 650 gals. and the temperature of the liquid is 44°F. You are also able to ascertain that its specific gravity is .509 or approximately so.

The Handbook Butane-Propane Gases contains a table on p. 51 entitled "Nat-

ural Gasoline Assn. of America (NGAA) Standard Volume Correction Factors for Liquefied Petroleum Gases." The table contains several columns of correction factors which vary for different specific gravities of the LP-Gas. Note the columns headed "Propane, Iso-Butane, N-Butane, etc." Most commercial propane contain some butane or ethane and therefore may not have a specific gravity of .5079. That is why .509 was selected for our example problem. Note that .509 is close to .510, so the correction factors in the column headed "Specific Gravity .510" may be used.

Follow down the column at the left hand side headed "Observed Temperature, Degrees Fahrenheit" to 44°F (the temperature of the liquid in the storage tank). Opposite 44°F in the column headed .510 specific gravity is the proper correction factor (1.025) to convert the gallons at 44°F to gallons at 60°F. Then $650 \times 1.025 = 666$ gals.—the volume of liquid that would be in the tank if its temperature was raised to 60°F from 44°F.

Taking another example and assuming there are again 650 gals. in the tank but the temperature of the liquid is 85°F and the specific gravity is .506 instead of the .509 we used in the previous example: This time the column headed propane .5079 may be used since it is nearest to .506. However, this time 85°F is the temperature and since the correction factors are all for even number temperatures, it is necessary to calculate the correction factor. The correction factor for 86°F is .956 and for 84°F is .959. Then the correction factor for 85°F is half way between these two, or .9575. The corrected gallonage is $650 \times .9575 = 622$ gals.—Ed.

HOLLAND

Our gas works in Curacao, which distributes L. P. gas in cylinders, makes use of copper tubes for the connection of gas appliances. As it is difficult to obtain sufficient stock of this material we consider the application of plastic-tubes.

Therefore, we shall be pleased to learn if this material has already been applied for this purpose in the

U.S. In case the experiences with this material are unfavorable, we kindly request you to inform us about the objections. We shall also appreciate it if you could furnish information about the use of aluminum tubes.

H.L.F.R.

We have no records of the use of plastic tubes for L. P. gas service in this country. Natural gas companies have tested it and have made limited application.

All the national fire prevention codes and L. P. gas safety orders in the United States prohibit the use of hose or tubing (other than copper or steel) for L. P. gas piping. The use of hose is also prohibited except for small heaters where a shutoff cock is at the wall and the hose is used between the valve and the appliance.

The use of aluminum tubing is not permitted for L. P. gas service in this country.—Ed.

FLORIDA

Can you tell us whether or not steam will clean the grease and dirt from used ranges such as restaurant equipment? If this will do the job can you tell us where we might locate a small boiler or steam maker for use on such equipment. In cleaning it by hand it takes a man two or three days to really clean one and repaint it.

W.R.L.

This is a very satisfactory method. Many advertisers in BUTANE-PROPANE News offer boilers which would serve your purposes.—Ed.

ILLINOIS

We have a mining company interested in using propane carburetion on trucks used for hauling ore underground. The deciding factor will be the amount of exhaust fumes as well as the contents of the exhaust. Can you furnish me this information? They have found by using oxygen with fuel oil the harmful elements in

their exhaust was cut down. Has this been tried with propane?

The trucks will be used from 200 to 600 feet underground. Will the depth underground have any effect on propane carburetion?

K.B.

Propane-fueled engines have been used in underground work without producing harmful quantities of carbon monoxide in the air. These engines used air from the atmosphere without oxygen enrichment for their operation. This subject is discussed on pages 272 and 273 of the Handbook Butane-Propane Gases.

The underground operation should have little effect otherwise since 200 to 600 feet below the surface would probably not be below sea level operation.—Ed.

UTAH

We would like to use propane or butane gas in a vehicle that will be operating underground and would like to have a letter from an authoritative source, such as yourself, stating that the gas will exhaust less carbon monoxide than diesel fuel.

We hope that such is the case.

R.C.K.

We cannot say that an internal combustion engine burning propane or butane gas will produce less carbon monoxide gas than one using gasoline or diesel fuel. In each case it is a matter of correct adjustment of the carburetor or fuel pump to produce a proper fuel-to-air ratio and provide complete combustion of the fuel.

All other factors being equal and the carburetor being in good adjustment, there should be less chance of carbon monoxide being formed with L. P. gas because it enters the cylinder as a dry gas intimately mixed with the air for combustion, whereas gasoline is a fine mist or a vapor and diesel oil is injected into the cylinder as a liquid.

There is little difference in the exhaust fumes produced by diesel oil, gasoline or propane, on properly adjusted engines, except for some variation in the relative percentages of the gases produced.—Ed.



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Comment

PROSPECTS are bright for business in '52.

From every information source come reports that are favorable. The most authoritative one is a special survey made by BUTANE-PROPANE *News* among the L. P. gas bulk plants of the nation.

Results indicate that during the coming 12 months the industry can reasonably expect increases as tabulated below. There will be variations according to district, but if every dealer will accept the figures for his own quotas, and get out and sell, he will probably average up with the rest.

The details of the survey appear elsewhere but here is a quick look at percentage increases expected for 1952:

Fuel	20.4%
Appliances	22 %
Bottled Gas Systems.....	16 %
Bulk Systems.....	29 %
Carburetor Sales,	
Engine Conversions.....	88 %

•
The surveys BUTANE-PROPANE *News* is making are a great service to the industry. Statistics in the past have been meager, or lacking entirely. This has resulted in confusion and uncertainty, especially in times like the present when government authorities are endeavoring to curtail development in the name of war economy.

Manufacturers can take our figures on the 1952 potential to Washington with full assurance that they represent the actual expectations of operators who have intimate knowledge of the needs of their communities.

All LPG services are essential ones to those living beyond the mains and if citizens across the country say they need more fuel and appliances for household uses, it is certain they do, and this should command consideration of those who allot basic materials to make goods that help the people to live decently.

•
What has happened to our industry in the past year is important both to complete the year-by-year record and to form a substantial basis upon which to estimate and build the future.

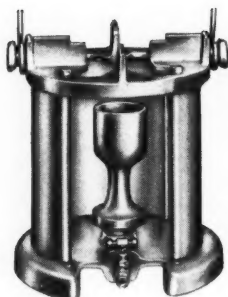
The Phillips Petroleum Co. annual estimate of marketed production of liquefied petroleum gas, published in this issue, shows an overall growth of 25.9% during 1951.

This closely parallels 1950 when the gain was 25.4% and indicates that total sales are doubling every four years. That's a whale of a growth for any industry. It emphasizes the responsibilities of its members to serve its clients adequately, and it envisions the great potentials for profits that are a legitimate goal.

•
Cooperative organizations operated by 1,000,000 farmers in this country, did a gross business of \$300,000,000 last year, according to report.

This group is encroaching upon the LPG dealer in no small way. It handled about 15,000,000 gals. of butane and propane last year and what hurts most is that it is not government-taxed for the same operations as LP gas dealers perform—but are taxed.

By Ed.



Here's Year-Round Sales Booster...

RANSOME P-2S UTILITY FURNACE

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Roofing contractors
Machine shops
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Melting paraffine for wire wrapping
Heating asphalt for patching jobs
Melting lead
Melting babbitt
Melting glue
Heating water
Space heating

YOU PROFIT 3 WAYS — There's a good margin on initial sales; then users buy LP-Gas the year-round, usually in small containers that gross $\frac{1}{3}$ to $\frac{1}{2}$ more than bulk gas. RANSOME P-2S furnace users quickly become prospects for other industrial equipment using LP-Gas; also for home uses.

POWERFUL SELLING POINTS — Like all RANSOME torches and furnaces, the P-2S burns clean, safe, quick-starting LP-Gas—no pouring, pumping or priming; no spitting or flashing flame; no fumes or soot. Operates 6 hrs. on 1 gal. at 2# pressure. Burner is non-clogging. Maintains steady flame even in high winds; heats and melts quickly. Available with space-heating hood or top shield.



Why not stock the year-round, volume-building RANSOME line NOW. It's a wonderful sales fill-in. Write TODAY for price lists, discounts and catalog.

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BEYOND THE MAINS

THE recently announced "Adequate Storage" program and materials which it has made available for the industry should prove very valuable in guiding and helping established dealers to handle their peak load problems and insure uninterrupted year-round service.

Adequate customer storage, as this magazine has repeatedly pointed out, is one of the important steps in the solution of the dealer's winter-summer load balancing problem. It leads, however, to another problem, the solution of which is by no means simple. The presence of a large customer-owned tank, with considerable surplus storage capacity during the summer months, is an open invitation for the pirating of the dealer's customer by some fly-by-night operator who is able to offer distress fuel at a cut price.

Retaining customers against this kind of competition calls for every bit of merchandising skill that the dealer possesses. Building up summer consumption, so the customer's tank can be kept reasonably well filled throughout the year and the surplus storage space reduced, is a part of the answer to this problem.

Ours is primarily a service busi-

ness, and the same principles apply which have been successful in other service undertakings. In the retail gasoline business, which is probably the most highly developed service activity in the world, we note that a small number of outstanding companies do the bulk of the volume. There will always be a few customers who will buy their gasoline, and other commodities, where the chief inducement is price. The large majority of purchasers still prefer to do business where quality of product and dependable service are assured, and where a price that is fair to both the buyer and the seller prevails.

Farmers and feeders of cattle and hogs in the corn belt face the loss of many millions of dollars this year because weather conditions resulted in excessive moisture in the corn at harvest time. According to the "Farm Journal," the wet corn has exceptionally low feeding value—in some cases only 70% of normal. Much of the crop is already moulding in the cribs. Farmers have been drying all they could artificially, or hiring it done. There are not nearly enough dryers, however, to cope with the emergency.

These facts indicate that the coming year should provide a tremendous opportunity for the sale of crop drying equipment throughout the corn belt. Forward-looking dealers will be promoting the sale of gas operated

dryers and dehydrators, both portable and permanently installed, as a means of increasing their market for fuel during the off-peak months. Watch the coming issues of BUTANE-PROPANE *News* for articles on how to cultivate this important but relatively undeveloped market.

●
A VAILABLE forecasts indicate that in January and February we may see a repetition of last winter's shortages of L. P. gas. This, in spite of a 15.7% increase in monthly production, approximately 23% increase in available rail tank cars, a new barge, many more truck-and-trailer transport outfits, and increased storage facilities. Rising consumption has just about cancelled the gains resulting from increased facilities.

Next summer will again see the producers' storage plants full to overflowing, deliveries running less than production, and the No. 1 problem of the industry still centered on balancing the winter and summer loads.

This problem presents two main avenues for attack—(1) adequate storage all along the line from the producer to the consumer to provide the inter-seasonal reserve now necessary to carry over for the winter heating requirements, and (2) the creation of new summer uses to equal the winter load.

To be fully effective, every distributor and dealer must carry out the part of the job required by his own operation.

Necessary as it is at this time, the enlarged storage program is not the final answer. It is true that, given sufficient consumer storage capacity, the production plants, main line transportation facilities, distribution plants, and distributor transport equipment can all be operated on a steady and constant basis throughout the year. This is a move in the right

direction, and an important factor in the ultimate economy we hope to achieve.

The fact remains that all facilities required for the storage of surplus L. P. gas anywhere along the chain of distribution add to the cost of the product without adding to its value. The final answer will come, not from the mere seasonal balancing of deliveries, but from the seasonal balancing of consumption. Some few scattered dealers have already accomplished this by aggressively and intelligently developing the agricultural fuel market, as it can be done in any major agricultural area in the United States.

In this rapidly growing industry, surplus storage anywhere back of the consumer's tank need not be "surplus" for very long. With effective promotion of summer consumption, all storage capacity now existing or projected will soon be needed for current consumption. And every sale of a summer load now offsets part of the present need for excess consumer storage for winter requirements, adds to the potential profit of the dealer, and strengthens the competitive position of our industry by making it possible to deliver more Btu's per dollar.

●
Two out of three homes in the United States today use oldfashioned, inadequate heating equipment, according to a national survey recently made by the Minneapolis-Honeywell Regulator Co. Prospective home builders located in seven cities and more than 3300 people in 105 cities, towns and villages were interviewed as a part of this extensive survey.

There are about 46,000,000 homes in the nation, half of which are probably more than 30 years old. These older homes are the ones that are, for most part, inadequately heated. It opens a big market for the butane-propane dealer.

PREVIEW

The Outlook For 1952

WHAT would the butane-propane industry do sales-wise in 1952 if no more Government restrictions are issued?

That is a question of utmost interest to all dealers and manufacturers because basic information upon sales potentials would enable manufacturers to plan production and merchandising programs on a factual foundation and aid them in estimating probable needs for scarce metals, thus establishing an authentic source for requesting Government controlled materials. And dealers, in turn, will receive the benefits of increased metals allotments.

In an effort to obtain an estimate of the volume of business that dealers believe they can attain in the 12 months ahead, BUTANE-PROPANE *News* sent questionnaires to all of the LPG bulk plants in the United States and the results are presented here to throw definite light upon this highly important subject.*

*This is the second national survey made by BUTANE-PROPANE *News* in the past nine months. The first, published in the June, 1951, issue, covered the market for carburetion equipment on tractors.

Fig. 1 shows national percentages of expected gains in 1952 over 1951.

Fig. 2 gives a regional picture of anticipated increases in percentages. All percentage figures should be accepted as such. They do not represent volume. However, the expected 1952 national average percentage gains, when projected upon the gallonage figures for 1951,* will give an accurate estimate of what may be expected this year.

Bulk Plants Across Nation Provide the Figures

Returns have been received from 563 separate, representative bulk plants from Coast to Coast. These major operators, scattered over such a wide area, showed total fuel sales in 1951 of 370,000,000 gallons and as they constitute a good cross-section of the entire industry, it is logical to project their figures for the entire country.

Reporting bulk plants give the following figures on 1951 sales and estimates of what they will do in 1952:

*See U. S. Bureau of Mines report, November, 1951, issue of BUTANE-PROPANE *News*, Page 45.

What the Survey Shows

1. FUEL

How much liquefied petroleum gas will be sold in 1952 compared to 1951?

Combined returns indicate an increase in fuel sales of 20.4%.

The state breakdown ranged from 8% to nearly 135%.

The Phillips Petroleum Co.'s estimated marketed production of LPG in 1951 (see elsewhere in this issue) and bulk plant estimates of percentage gains for 1952 over 1951 sales in various districts provide interesting comparisons.

Generally speaking, the same districts show the largest increases in expected sales of appliances, cylinders and tanks, with New England leaning heavily toward bottled gas installations, and with bulk gas installations leading in most of the other regions.

2. APPLIANCES

How will 1952 sales of major appliances (ranges, water heaters, heating equipment, and refrigerators) compare with 1951?

Operators estimate a 22% gain over 1951 in the number of appliances which will be sold. The range of increase is from 10% to 44% by state breakdown.

The Pacific states lead the nation in expected increase with 44%. New England is in the No. 2 position with 31%; the Rocky Mountain area is No. 3 with 29%, and the East South Central district looks for 25% new business.

3. BOTTLED GAS SYSTEMS

How many more bottled gas systems will be installed in 1952 than in 1951?

Distributors say 16%.

While sales of cylinders are greatest in the Northern and Eastern sections of the country, there is a surprisingly large number distributed in so-called bulk territory.

This is evidenced by the survey returns which show the Pacific states, expecting a 32% increase, are only second to New England which looks for a 42% gain.

The West South Central section with 29% and the East North Central and Rocky Mountain states, each with 24%, follow in order.

4. BULK SYSTEMS

How many consumer bulk systems will be installed in 1952 over 1951?

Figures show 29% gain.

New England, stronghold of cylinder distribution, gives a surprising estimate of 95% increase in consumer bulk system sales. This is probably due to increasing use there of LPG for house heating and for industrial enterprises, and forecasts a completely changed dealer attitude toward low-cost volume business at the sacrifice of higher per-gallon prices for more limited uses.

However, this is an illustration of how percentage figures can be misleading, as New England currently has fewer bulk plants than most districts so a 95% gain would not result in volume sales to compare with smaller percentage gains in districts already handling large bulk operations.

The East North Central, with 44% gain predicted, comes second, followed by the West North Central (33%); Pacific (30%); and Rocky Mountain (25%).

5. CARBURETOR SALES, ENGINE CONVERSIONS

What increase in 1952?

88%!

While engines have been operating on butane and propane since the early 1930's and attained considerable volume in the West and Southwest before World War II, the real strides in this field have occurred in the last two years when concentrated efforts were made to convert farm tractors to help balance the year-round load of dealers plagued with bad summer-winter ratios of fuel consumption.

Results have been astonishingly favorable to date and the future looks even more promising, with states east of the Mississippi river beginning to show increased numbers of conversions on trucks as well as tractors. Chicago's order for 500 propane-burning buses in 1950 started a strong movement among cities to convert their gasoline equipment to LPG and this trend is spreading rapidly.

Filling stations, where LPG is dispensed from pumps similar to those used for gasoline, are installing storage. There are more than a thousand of these across the country now.

In what has become almost a race to get in on this additional source of income, which is the most important load balancer yet developed, the leading districts expect gains as follows: East South Central, 140%; West North Central, 125%; East North Central, 120%; Pacific area, 109%.

PREVIEW

FIG. 1. PERCENTAGE GAINS EXPECTED BY BULK PLANT OPERATORS IN 1952 OVER 1951.

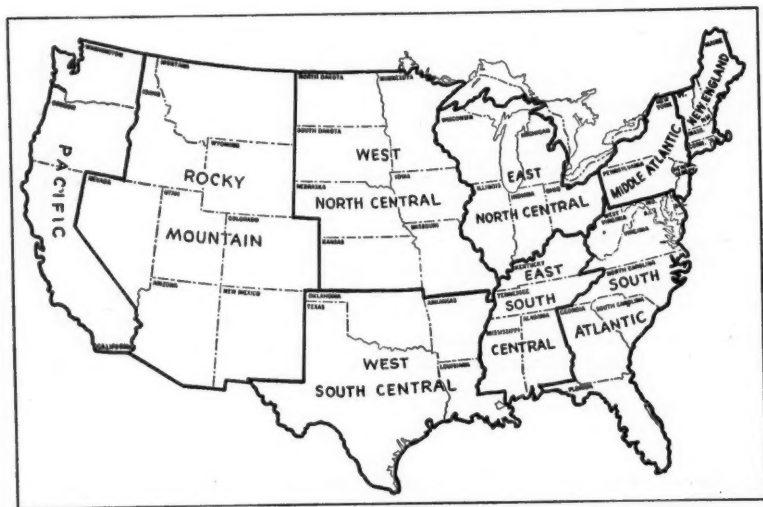
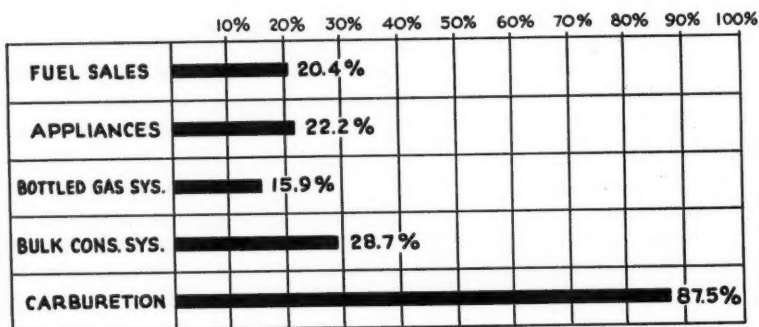


FIG. 2. MAP SHOWING THE DISTRICTS FOR WHICH FIGURES ARE GIVEN TO SHOW EXPECTED PERCENTAGE GAINS IN 1952.

TABLE 1.—PERCENTAGE OF GAINS EXPECTED BY BULK PLANT OPERATORS.

(It must be remembered that "percentage" does not represent number of gallons, but is based upon the existing statistics for any given district.)

	Fuel	Appliances	Bot. Gas	Blk. Gas	Carb.
New England	36%	35%	42%	95%	—
Middle Atlantic	14%	10%	8%	7%	*
South Atlantic	9%	20%	16%	13%	59%
East So. Central	20%	25%	15%	24%	140%
East No. Central	27%	18%	24%	44%	120%
West No. Central	22%	17%	6%	33%	125%
West So. Central	19%	15%	29%	22%	74%
Mountain	27%	29%	24%	25%	36%
Pacific	15%	44%	32%	30%	109%
Total National Average	20.4	22.2	15.9	28.7	87.5

*Not sufficient to evaluate.

Tabulated details of the survey percentage figures for these and other returns will be found in Table 1.

Will Buy More Trucks, Too

Operators reported they expect to purchase 7% more tank trucks and transports than in 1951, and 4% more service delivery units, with the larger equipment principally going into the bulk gas states and the delivery trucks for the areas where cylinders are most commonly used.

THIS SURVEY revealed the importance of the bulk plants as merchandisers of fuel, equipment and appliances. Tabulations show 88% of the plants replying sell appliances, 84% sell both storage systems, and 61% sell carburetion equipment.

It should be remembered that included in these percentages are replies from a number of specialized bulk operators such as truck service stations. If these were excluded, the percentage selling appliances would be far higher.

REVIEW

8 Million Users Boost 1951 Sales to 4.1 Billion Gals.

By K. W. RUGH*
and
GEORGE R. BENZ**

THE liquefied petroleum gas industry continued its spiraling growth as 1951 sales reached an estimated 4.1 billion gallons. These estimates show an industry sales gain of 25.9% over 1950.

Household and farm use, including direct motor fuel use, accounted for sales of 2,868,000,000 gallons. L.P. gas installations serving suburban homes and all the miscellaneous uses on farms and in farm homes now total over 8,000,000 which are served by 4500 bulk plants located throughout the country.

Previously reported trends toward bulk distribution of L. P. gas and direct motor fuel use continued. In addition to greatly expanded use in farm tractors, L. P. gas now fuels over 1000 buses and many thousands of other heavy duty internal combustion engines. There are excellent prospects for far greater growth in this field.

Sales to industries and utilities are estimated at 230,000,000 and 252,000,000 gallons respectively. Both markets showed below average growth principally because of the extension of natural gas lines during the year.

The petrochemical industry remains the second largest market. The manufacture of chemicals and chemical intermediates required an estimated 750,000,000 gallons. This does not include the use of LPG for the manufacture of synthetic rubber components which alone required 344,000,000 gallons.

While still a major problem, transportation facilities are in better shape than ever before. Another barge for coastwise shipment of L.P. gas was constructed during the year and a pipeline for moving L.P. gas from the Texas Panhandle to the Chicago area is under construction. There are 12,643 tank cars estimated to be in L. P. gas service at the end of the year.

* Assistant sales manager, Phillips Petroleum Co., Bartlesville, Okla.

** Manager, engineering department, Phillips Petroleum Co., Bartlesville, Okla.



K. W. RUGH



GEO. R. BENZ

The year's progress indicates a continuing increased demand comparable to that experienced in the past. There are indications that production will have difficulty in keeping pace with the demand during peak winter months. This unbalanced supply versus demand condition is influencing larger storage at all stages of the distribution channels. The results of this influence can make it possible for the industry to balance its demand and supply in a reasonable period of time.

Domestic and Motor Fuel Use

Weather conditions throughout the country played an important role in domestic and motor fuel sales during 1951. The unusual cold during the first part of the year, and again in the closing months, added greatly to the demand for heating. The long, dry period during the spring and summer throughout most of the southwest increased the consumption for

pumping irrigation water. Partially offsetting these influences were the extended rains and floods in many important marketing sections.

During the year, approximately 470,000 ranges and 260,000 gas water heaters were manufactured especially for the use of L. P. gas.

The trend toward bulk distribution continued to gain momentum during the year. Since the major load in bulk distribution is for house heating, it is significant to note the estimate that 19% of the gas-fired floor and wall fur-

LPG DURING 1951

Consumers	8 million
Sales	4.1 billion gals.

•

Domestic & Motor	
Fuel	2,868,000,000 gals.
Industrial	230,000,000 "
Gas Manufacture	252,000,000 "
Chemical	750,000,000 "

REVIEW

MARKETED PRODUCTION OF LPG

Year	Total Sales Gallons In Thousands	(In thousands of gallons)		Domestic and Motor Fuel (1)	Inc. and Misc. (2)		Gas Mfg.	Per Cent Increase		Chemical Mfg.	Per Cent Increase	
		Per Cent Increase	Per Cent Increase		Per Cent Increase	Per Cent Increase		Per Cent Increase	Per Cent Increase		Per Cent Increase	Per Cent Increase
1950	3,254,082	22.4	24.9	2,034,464	355,456	(3)	251,694	5.2	612,468	12.4		
1951	4,100,000	25.9	(3)	2,868,000	230,000	(3)	252,000	0.0	750,000	22.5		

- (1) Household use plus other requirements by these customers such as irrigation pumping, tractor fuel, flame weeding, chicken brooding, and similar uses. Included also is LPG sold by domestic distributors but used for industrial purposes, internal combustion engine fuel and for gas manufacturing purposes. Included also, in 1951 only, is LP gas sold direct by producers and marketers solely for fueling internal combustion engines.
- (2) For all years prior to 1951, includes LPG sold for fueling internal combustion engines.
- (3) Not comparable due to change in method of reporting LPG sold for fueling internal combustion engines.

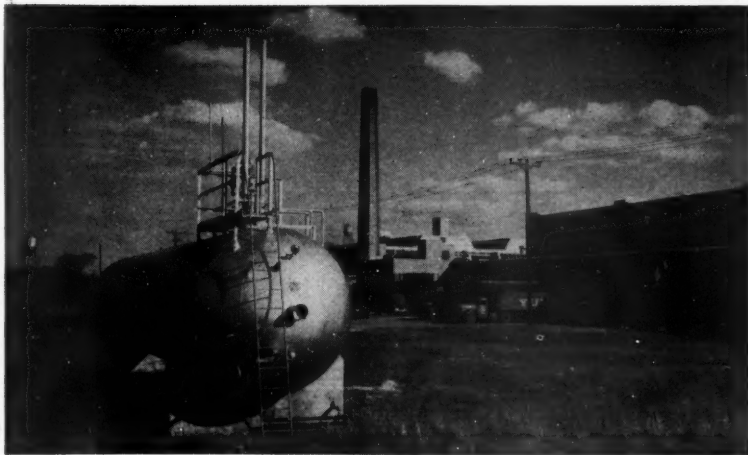
nances produced during 1951 were equipped to burn L. P. gas.

The estimate that at the close of 1951 there were in excess of 8,000,000 L. P. gas installations on farms and in suburban areas shows a 32.5% gain over 1950, which includes motor fuel use taken from the industrial classification for the first time this year. This figure includes summer homes, trailers, motels, and other commercial establishments, as well as the growing number of multiple installations on farms, hence it exceeds any figure based on single installations at permanent addresses.

Direct motor fuel use of L. P. gas continued its rapid gain during the year. The actual gallonage used for internal combustion engines is impossible to estimate accurately. A single bulk tank on a farm may supply gas for cooking, heating water, house heating, brooding, flame weeding, and also as power fuel for tractors, irrigation pumping, and other types of power development. Sale of L. P. gas conversion equipment for tractors continued at a high level. Factory produced tractors equipped for L. P. gas were announced by two additional tractor manufacturers during the year, along with additional models by certain manufacturers who were in production during the past season. Conversions of trucks, buses, irrigation engines, and taxi fleets, also reached new highs during 1951.

Industrial Use

While the method of reporting has been changed so the 1951 in-



Typical LPG installation serving an industrial plant.

dustrial sales figures are not comparable with those of previous years, it is believed that definite progress has been made. The last quarter of 1950 brought a distinct upsurge in sales for industrial use as the defense program got into high gear. In addition, the move toward decentralization placed many new plants beyond the reach of gas mains. Increased availability of natural gas in certain industrial areas was a counter-balancing influence, as were the many plant shut-downs caused by changing production from consumer goods to defense items.

Chemical Manufacture

The sale of L. P. gas as a raw material for the manufacture of chemicals and of chemical intermediates again set an all-time high

in 1951. Total sales for this use are estimated at 750,000,000 gallons, an increase of 22.5% over 1950. This does not include the large volumes consumed in the production of aviation gasoline or synthetic rubber, which for the latter product alone is estimated at 344,000,000 gallons.

Supply, Storage, Transportation

The present supply situation is very tight, and many indications point to another winter shortage. Maximum monthly production capacity is reported to be up 15.7% over last year. The increase of 25.9% in use during the past year indicates that there has been an increase in consumption during the off-peak months. Increased reserve storage facilities have also been

REVIEW



A farmer fuels his LPG-powered tractor from the same tank that supplies gas for heating and cooking purposes in his home.

enlarged at all levels from the producer to the consumer.

In addition to the barge and pipeline construction mentioned above, tank car facilities have been increased approximately 20%. On Jan. 1, 1951, 10,302 pressure tank cars were in L. P. gas service. As of the end of the year, 2341 additional new cars had been scheduled for delivery for exclusive use in L. P. gas transportation, while a large number of dual-service anhydrous ammonia tanks were made available for the transportation of L. P. gas.

The progress during the past year, and the factors known to exist at this time, indicate a continued expansion of the industry during 1952.

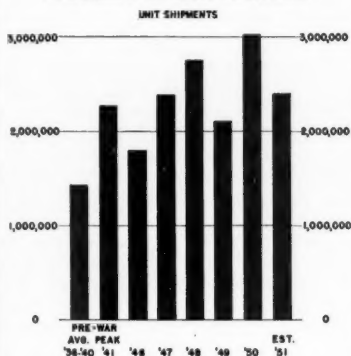
Overall Picture of Gas Appliance Sales

CHARTS on opposite page, supplied by the Gas Appliance Manufacturers Association, Inc., are based on 1951 appliance sales. The percentages in recent years of those factory equipped for L. P. gas have been approximately as follows:

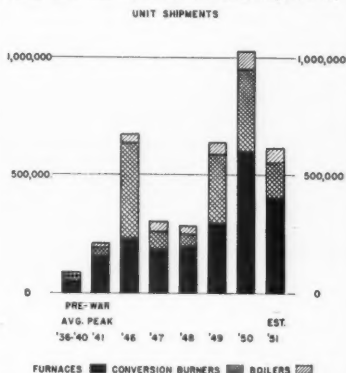
Domestic ranges	19 to 23%
Water heaters	13 to 15%
Central heating	2 to 3%
Floor and wall furnaces	17 to 20%

In addition, a great many of all units originally built for natural or manufactured gas have been converted to L. P. gas.

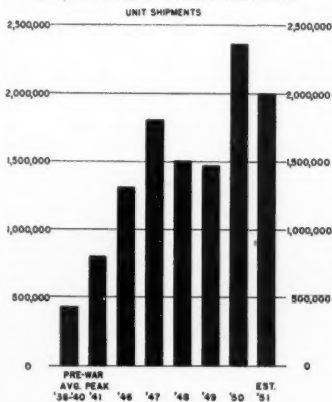
DOMESTIC GAS RANGES



GAS-FIRED HOUSE HEATING EQUIPMENT (WARM AIR FURNACES, CONVERSION BURNERS, BOILERS)



AUTOMATIC GAS WATER HEATERS



Industry Storage Capacities Surveyed by PAD

In order to have on hand complete data about the storage space in areas of greatest consumption, the Petroleum Administration for Defense, under the direction of Deputy Petroleum Administrator Bruce K. Brown, has questioned about 13,000 dealers, distributors, marketers and producers of LPG.

The questionnaires asked for (1) total number of tanks; (2) total capacity in gallons of all tanks with a working pressure of 200 or more pounds per square inch gauge; and (3) total capacities of all tanks under 200 psig.

Anyone who has storage facilities and has not received a questionnaire has been asked to contact the Petroleum Administration for Defense, Interior Bldg., Washington 25, D.C., in order that the government agency can determine just what storage facilities would be available in case of emergency and to recommend any necessary expansion.

GAMA Charts Covering 1951 Appliance Sales

Propane Goes North

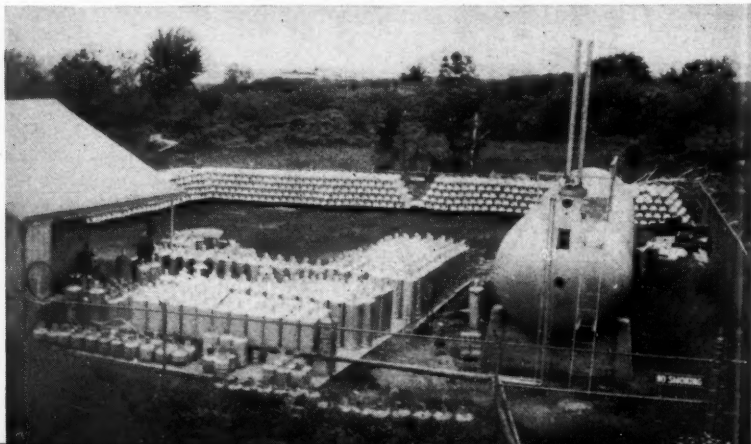
THREE hundred and twenty-one years ago the Hudson Bay Co. established the first settlement in the present province of Ontario, at Moose Factory, the present site of Moosonee, 17 miles up the Moose River from James Bay. Some of the original buildings of the trading post still stand. Within the past year, bottled gas service has been introduced into Moosonee by Reeco Ltd., distributors of "Chaudane" gas, with headquarters at North Bay, near the Quebec-Ontario border about 200 miles north of Toronto.

Reeco Ltd., established its first plant at North Bay about two years ago, unloading its first tank car of propane early in the winter of 1949. The owners chose "Chaudane" as the name of their product, since most of the local population is of French origin, and "chaud" in French means "hot." The plant includes an 18,000

U.S. gallon storage tank and a concrete block cylinder filling house equipped with three special automatic scales. Deliveries are made with a GMC truck with a tail gate loader; 85 filled cylinders can be carried at one load.

More than 500 retail customers are served within a radius of 50 miles of North Bay, and dealers have been set up in a dozen outlying towns. Moosonee, the northern terminus of the Ontario Northland Railway, 400 miles farther up toward the Arctic, is served by the company's own agent, Archie Michelle, who supplies about 25 installations, including the large Canadian government hospital on Moose Island, opposite the town. This hospital is a 15 million dollar installation, caring for the needs of the Indians and Eskimos of the sub-Arctic region, who are flown to and from the hospital in special ambu-

Bulk propane storage and bottling plant of Reeco, Ltd., located in Northern Ontario.



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Propane-fueled delivery truck with capacity for carrying 85 filled, 100-lb. cylinders. It is equipped with a tailgate loader.

lance planes. The staff houses connected with the hospital are all equipped with Chaudane - burning ranges, and arrangements are under way to install Chaudane ranges and ovens in the hospital kitchen.

During this winter Reeco has opened up a depot in Sudbury, a mining town of about 65,000 population located on one of the largest known nickel deposits. Gas is now being trucked in cylinders from North Bay, a distance of about 80 miles. It is the company's intention to install a storage tank and bottling plant at Sudbury in the near future.

Military Camp Served

The company also has a contract from the Dominion Government to supply Petawawa military camp with bottled gas. There are more than 60 cylinder installations in the camp, in which the banks range from six to 40 bottles each. A special truck carrying 85 100-lb. cylinders makes an average of three round trips to the camp each week. This truck operates on Chaudane.

The company has now progressed to the point where its 18,000-gallon storage tank is being used to ca-

capacity, and an additional 30,000 gallon tank will be installed in the near future.

Owners and officers of Reeco Ltd. are Charles E. Ruddy, Dr. Joseph O. Ruddy, Gordon T. Ruddy, and Douglas Holliday.



A. Michelle, Reeco representative in Mooseonee, dressed for Arctic weather, stands beside a cylinder installation serving a four-family apartment building.



Are you prepared to sell commercial cooking equipment? Can you talk the restaurant owner's language? Are you qualified to help him solve his fuel problems?

Here are some fundamental selling facts and typical questions and answers to fortify the dealer with information which will help to establish him as an authority in the eyes of his commercial prospect.

Can You Sell Commercial?

It's easy if you know the arguments for gas

AS a gas dealer serving butane or propane gas, you assume the obligation to sell, install and service several types of gas burning appliances. Otherwise, you would not be performing a complete function and some "on-his-toes" competitor, the electric man for instance, would make inroads into business you should have. This would be only his toe hold. He'll go on from there to undermine your business bit by bit until he becomes a formidable competitor.

More commercial cooking business is lost because of too little

know-how and too little push than for any other reasons. That being true, the logical approach is to fortify yourself and your personnel with information and initiative and then go out after the business. People like to be sold by salesmen who know their product, believe in it, know how to sell it, and will stand behind it. If you need information and help to get rolling,

By TRACY B. MADOLE

Manager, Commercial Sales Department
Magic Chef, Inc., St. Louis

there's always a manufacturer's representative close to give you a hand. He'll be glad to hear from you. Just rustle up some prospects and give him a ring.

Sell "Profit"

In commercial sales, "profit" is the key to orders. "Profit" is the motive that interests your prospects. "Profit" is the "buy" word. On 9 out of 10 calls, your prospect will either be cooking for profit or he will be vitally interested in economy as a matter of operating within a budget. It is then logical that you sell the "profit" idea first, last and always.

For instance you want to sell your prospect a deep fat fryer. He has none now. He does a minimum of deep fat frying and for what he does, he uses a fry kettle on the top of his range. However, he has a satisfactory location and does a fairly good short-order business.

Let's assume you know this prospect. You should have at least a speaking acquaintance with him, in order to have his confidence. Then your approach might be something like this . . .

"Mr. Prospect, there are a lot of people who buy soup, sandwiches

and pie who would like to have an order of good french fries along with them. The trouble is, they're not anxious for the kind that comes out of a kettle on the top of a range. Why? Well, because you have to control the fat temperature to do a good job of frying potatoes, and you can't do it on top of a stove. If it's not hot enough, they're soggy. If it's too hot, they're brittle or burned and it's impossible to maintain the right temperatures on top of the range. Why? Because the instant you put cold potatoes into hot fat, the fat temperature drops considerably, depending on the volume and temperature of the potatoes. Only an automatic fryer, with a temperature control, will bring the fat temperature back up quickly and then turn off the heat at the exact instant it reaches the correct frying degree.

"And here's another reason, Mr. Prospect. The first time you overheat frying fat, you break it down and it's no longer fit for frying. It then soaks into the potatoes, spoils the taste, and in addition, tends to make them hard to digest and your customers won't want repeat orders of those. Then you have to throw away several pounds of fat and replace it, which is expensive; probably \$3 or \$4 each time you do it. Do that once a day and the end of the month loss is \$120. An automatic fryer will do the job for you much better and at a fraction of that cost.

"But that's only a small part of the fried foods story. You know potatoes are comparatively cheap and if you can build up a good business in french fried potatoes,



TRACY B. MADOLE



A few of the tempting foods which can be prepared in a deep fat fryer.

it means extra profit. Plenty of extra profit in the till. It could mean several extra profit dollars a day, because your customers will come back day after day for good french fries. Then, of course, there are many other profitable items such as french fried onions, french fried shrimp, chicken, cutlets, croquettes, scallops, doughnuts, fritters, etc., that you can prepare in a good automatic deep fat fryer that will build your business and build your profits.

"Now, a new automatic gas fryer will operate with little or no more gas than you're using now. Maybe less. It will do a great deal more work on less frying oil than you are now using, and the cost of

owning this automatic fryer is only about 10 cents per day, including both interest on your investment and depreciation. In other words, Mr. Prospect, you can do lots more deep fat frying and better quality deep fat frying than you're now doing, at a cost to you of about 10 cents a day. Would you be interested in improving your food service to that extent?"

Questions and Answers

The chances are by this time, Mr. Prospect is interested enough to ask questions. If so, you're right on the road to an order. Some typical questions, with logical answers, might be as follows:

Question: We've been using lard

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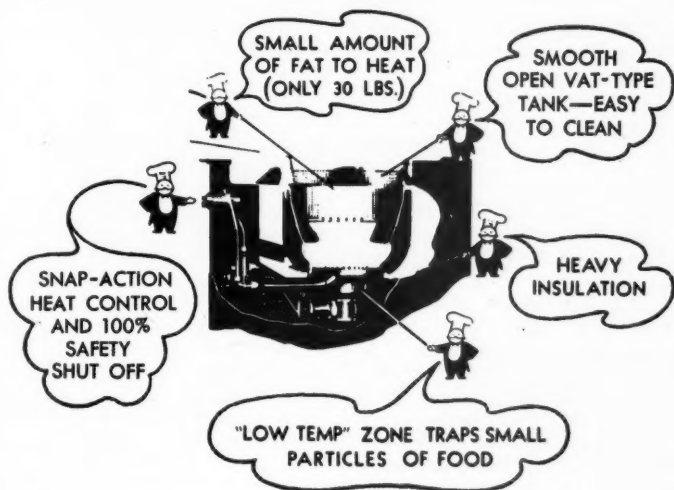
for frying. It does a good job but does get black and we usually change lard every day or two. Wouldn't that be expensive with frying oil?

Answer: No, that's just the point. With any high grade frying oil, the breakdown temperature is much higher than lard. As a matter of actual practice, with a good oil and an automatic gas fryer, you seldom need to change oil at all. It's better if you just drain it and strain it each day to get the burned particles out of it and then add a little oil to bring it up to the right level. You don't have to change it because you don't burn it. That's the big economy of the automatic gas fryer.

stance lard is one of the lowest. The commercial frying oils are the most satisfactory. But when any compound heats up beyond a certain temperature it burns, becomes black, and loses its frying qualities. Whenever it's used after that, it simply soaks into the food and does not fry properly. It also darkens the food when in that condition, and of course, potatoes, etc., fried in burned oil or fat are unpalatable and not readily digestible.

Question: You say "automatic." Isn't that expensive? If it's automatic it must run all the time. Doesn't it use a lot of gas?

Answer: Not at all. To begin with,



Question: You say my frying oil breaks down. What do you mean by that?

Answer: Every frying compound has a break-down temperature. Some are much higher than others. For in-

stance you have only a small pilot light that burns like the pilot on a gas stove. Otherwise there's no flame and no gas being used except when you're actually frying. You see this automatic gas fryer has a snap action

heat control that turns the heat completely off when you're not frying and the oil is up to temperature. That's why it's so economical of oil. You see when you're frying on top of the range, you can't control the temperature accurately and you're bound to overheat the oil that spoils it. The actual gas cost for an automatic gas fryer is small. The saving in oil should more than pay the gas cost. And the best part of this automatic gas fryer is that when you need it, the burner heat comes full on instantly and stays full on until the frying oil is at proper temperature, then it automatically turns off again.

Clean Operation Necessary

Question: How about cleaning? Isn't that machine hard to clean? You know that's one thing here, we have to keep things clean because we do all our work right here where the customers see it.

Answer: This automatic gas fryer is simple as a dish to clean. See here. As you say, it should be cleaned once a day. All you have to do is turn the valve and drain out the oil into the receptacle below. Then quickly wash the fryer bowl as you'd wash any other pan. Then strain the oil back into the bowl, add a little oil if necessary and you're ready to go again. It's simple, quick and easy. And best of all, you won't have the smoke from this that you have now, because oil at the right temperature doesn't smoke, and consequently it doesn't dirty up the walls and ceilings as your present method does. Automatic frying is clean frying and, of course, we know time saved cleaning is money saved for you.

Question: Time is worth money here, all right, but won't it require a lot of time to run that machine?

Answer: An automatic gas fryer runs itself. You set the frying temperature and forget it, except to put in food and take it out. It will actually save a great deal of time because you don't have to watch it. You can see where it might save as much as an hour a day for someone, and in these times, an hour saved is a dollar or more saved. In a month's time, these daily dollars saved can amount to \$30 or \$40.

Fast Service Required?

Question: Well, it sounds good, but we require speedy service here. When we get an order, the one big essential is that we get it on the counter fast. We require turnover.

Answer: There is no faster way to fry than with an automatic gas fryer. You can only fry so fast and do a good job, and after all, you must do a good job. You can't afford to serve inferior food. Well, your automatic gas fryer always maintains the frying oil at just the right temperature. Furthermore, when you put an order of potatoes in the basket and the oil temperature drops, the automatic thermostat instantly turns the heat full on and keeps it full on until the oil temperature is completely recovered. You'll find it's much faster than your present method. It's actually very fast and, of course, that's important because it means better food, and that's basically what your customers want. Give them good food, give it to them quickly, served attractively and you'll be assured of increased patronage.

Now you may be asked other questions, too, depending on how much your prospect knows about deep fat frying and deep fat fryers. For instance, is it a snap action thermostat? (Yes.) Do the

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crumbs circulate in the hot fat and lodge on other food? (No.) Does this fryer have a safety shutoff pilot? (Yes.) Is the fryer insulated? (Yes.) How fast does it heat? (Over 20° per minute.) Is the upkeep cost excessive? (No.)

Selling commercial cooking equipment is like any other selling job. It's well to know something about it before starting out, but you'll soon know a lot more about it if you fortify yourself and your organization with available basic



information and then go out and start talking business with prospects.

Remember, there's a manufacturer's representative ready and anxious to come in and work with you.

Indiana Firm Adds 30,000-Gal. Storage

Continued expansion at Frey Bros. Modern Equipment Inc., in Michigan City, Ind., is evidenced by the recent installation of an additional 30,000 gals. of storage.

The company has also announced the appointment of Emerson Houts as head of the bulk and dealer sales department of the bottled gas division. In making the announcement, Harry Frey, vice president of the firm, said that Mr. Houts has had 14 years' experience in the sale and distribution of bottled gas products. He was formerly territory representative for one of the major bottled gas distributors.

OPS Permits Adjustment In Producers' Prices

The Office of Price Stabilization by the issuance of General Over-riding Regulation 21, effective Dec. 5, sets up procedures that may be used by producers, refiners and processors of petroleum and petroleum products in filing for higher ceiling prices under the "Capehart Amendment" to the Defense Production Act, according to a Dec. 18 LPGA bulletin.

This regulation applies only to those mentioned above and does not cover distributors or dealers. OPS has at present under consideration an amendment provision to Ceiling Price Regulation 17 which will provide for adjustments to compensate for increased costs arising out of a price increase by the supplier.

Bremerton Plant Opened By Washington Firm

A new branch office and plant of Liquefied Gas Corp. opened in November with a celebration dedicated to the city of Bremerton, Wash. Coffee and doughnuts were served and one of the visitors won a Wedgewood gas range.

The branch with home offices in Seattle, has an 18,000-gal. storage tank. Earl W. Hopkins is manager of the Bremerton plant.

How Adequate Storage Will Help Balance The Summer-Winter Load

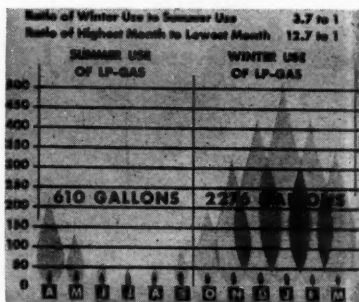
IN an effort to help the butane-propane industry solve its problem of balancing the winter-summer load ratio and provide uninterrupted year-round service, the National Committee for LP-Gas Promotion has announced an "Adequate Storage" program for assistance of dealers in working out their own particular problems. This program is the result of a vast amount of work done by the special sub-committee on adequate storage, the members of which are Lee A. Brand, Empire Stove Co., chairman; George P. Bunn, Phillips Petroleum Co.; Herman Merker, Pressed Steel Tank Co.; M. L. Trotter, Carolina Butane Gas Co., Inc., and Richard Verkamp, the Verkamp Corp.

Kits of materials explaining the program are now available, free of charge, to marketers. The key item in these kits is the "LP-Gas Storage and Ratio Manual," which contains instructions for figuring customer consumption and determining proper tank sizes, as well as degree day data for 400 cities throughout the United States, and simplified calculation sheets. Also included is a sample of a new consumer folder titled, "Facts About LP-Gas Storage."

The folder can be purchased in

bulk, and imprinted with the dealer's name and address. Additional copies of the manual and the calculation sheets are also available in quantity. Members of the National LP-Gas Promotion program receive a substantial discount on all of these materials.

Administration of the adequate storage program will be handled by the training sub-committee of the



Ratio: Winter use to Summer use—3.7 to 1; Highest month to lowest month—12.7 to 1; Winter to Summer deliveries—1 to 1



This chart shows how adequate storage facilities and advance delivery of gas solve supply problem of typical domestic user. The flame represents monthly fuel consumption. The dark portion indicates the base load for water heating, refrigeration and cooking, while the larger, lighter portion shows heating consumption.

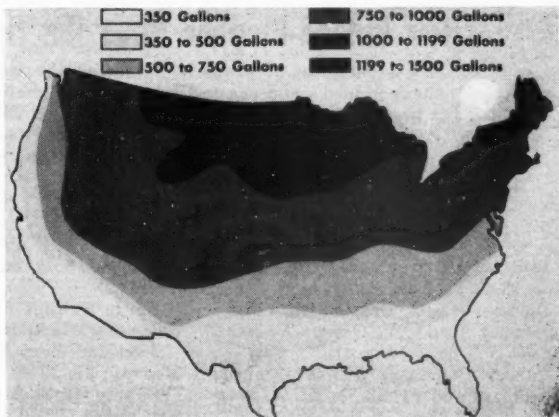
National Committee for LP-Gas Promotion. It lists the following major objectives for this industry-wide project:

1. Permit a 1:1 ratio of winter vs. summer deliveries.

2. Protect consumers against shortages during peak use periods.

3. Provide adequate storage for the consumer, but no more.

4. Provide distributors with as much latitude as possible regarding



This map tells at a glance recommended minimum tank sizes in all sections of country for domestic customers using L. P. gas for heating, water heating and refrigeration.

the size and annual number of deliveries to the tank.

5. Point the way toward greater standardization of tank sizes.

6. Provide distributors with a simple, practical formula flexible enough to be useful in any combination of farm or home loads.

To graphically explain the new adequate storage program, a 35-minute sound-slide film in color has been produced and is available for industry meetings. The film uses as an example a typical consumer installation using LPG for heating, cooking, water heating and refrigeration and shows how the recommended storage program balances winter-summer ratio. The consumer is encouraged to start building up his fuel supply in April. Thus, by November, maximum storage is in, ready for the start of the peak load season.

By following this plan, dealers can make a minimum number of deliveries at appropriate intervals.

This makes for the most efficient use of delivery equipment and consumer storage capacity throughout the year.

How necessary consumer storage can be reduced by building summer load is also emphasized in the manual. Less pre-use storage is required because more frequent and larger size fuel deliveries are made. Storage capacity can be reduced below that necessary for a heating load only.

A map showing recommended tank sizing for all sections of the United States is included in both the manual and the consumer folder. It tells at a glance the capacity recommended for any given area when LPG is used for heating, cooking, water heating, and refrigeration.

Marketers may obtain the kits of adequate storage materials by writing to the National Committee for LP-Gas Promotion, 11 S. La Salle St., Chicago.

How Butane-Propane News Has Helped

THE importance of properly balancing the winter and summer loads, and suggestions for its accomplishment, have been an important part of the BUTANE-PROPANE NEWS policy for several years. The following is a partial list of feature articles bearing on this subject, which we have presented to the industry:

1947

Build Your Summer Load on Engine Fuel, *by Paul Lady.*

Delivery Costs Drop With Larger Consumer Tanks, *by George R. Benz.*
Fuel Supply, *by Howard C. Felt.*

Larger Consumer Tanks Winning Customers and Profits, *by M. A. Massey.*

1948

Kansas Sold on Large Consumer Systems.

Large Storage Systems Bring Customer Satisfaction, *by O. D. Hall.*

Fuel for Next Winter, *by Wm. J. Murray, Jr.*

Supply Outlook for 1948-1949, *by BPN staff.*

1949

What Uniform Monthly Deliveries Would Do to Balance Load, *by John A. Storm.*

Gas Plays a Major Role in Harvesting Alfalfa, *by O. D. Hall.*

Two Ways to Balance Load, *by W. R. Sidenfaden.*

Sell the Tractor Load, *by Si Darling.*

1950-1951

Portable Crop Dryer — Another Summer Load Builder, *by Charles F. Bishop.*

Larger Customer Storage Needed. Sell House Heating and Tractor Loads Together, *by C. R. Daugherty.*

Arkansas Dealers Increasing Customer Storage, *by Craig Espy.*

Must Solve Winter-Summer Ratio, *by P. J. Hoagland.*

In addition (almost since the first issue in 1939), we have emphasized the importance of tractor conversions for providing summer load. Nearly 80% of the feature text of the June, 1951, issue was devoted to the agricultural uses of liquefied petroleum gas.—Editor.

Small Tank Owners Hit Hardest in Oklahoma Shortage

By O. D. HALL

A critical shortage of L. P. gas developed in Oklahoma in late December, due to early snowfalls and unprecedented cold weather. A delegation of 30 dealers met with the state fire marshal, W. J. Marshall, urging action to allocate more fuel to dealers than the 1½ to 1 winter-summer ratio called for in the present suppliers' contracts. The dealers voted to ask Governor Johnston Murray to request all Oklahoma refiners to supply dealers with last winter's quota of 3:1, plus 30%.

L. M. Mitchell, secretary of the Oklahoma LPGA, estimated that if the conditions then existing continued for 15 days, 10,000 homes in Oklahoma would be without gas.

It was pointed out at the meeting that Oklahoma produced 200,000,000

gallons of L. P. gas during the first nine months of 1951. Of that total, 136,152,183 were consumed by Oklahoma users, and the balance shipped to other states. An embargo on all out-of-state shipments was suggested until local needs were met.

The majority of the refiners questioned by the fire marshal are said to have reported that they were unable to exceed the 1½ to 1 ratio called for in their contracts, although one large producer agreed to allot an additional 10,000 gallons to Oklahoma above the quota specified in the contract. A large surplus was available last summer, but adequate storage facilities to meet the unusual demand of this winter are not available at the points of production.

Several dealers report that the real pinch is being felt by customers having small tanks, or those who neglected to fill their home storage before the cold weather set in.

Gas Sideline Becomes Major Department

By TED KNIGHT

ALL you have to do is to start a customer on bottled gas and it's only a matter of time until he will use it for all home applications," says Herman Mathews, owner of Barnegat Lumber Co., Ship Bottom, N.J.

"When we first started in the bottled gas business just four years ago, we did it to accommodate some of our regular store customers. We immediately hooked up our own appliances to bottled gas in our apartment above our store and began to enjoy this fuel ourselves. And there is no better way of knowing its advantages than by using it yourself!"

Primarily, Barnegat Lumber Co. is a building supply house. But the growth of the LP-Gas business has been so great that the firm intends to make it a separate department to facilitate greater customer service and better merchandising policies.

With Mr. Mathews' entry into the

bottled gas field, he immediately started a promotion of his own. Announcements were sent out to the store's regular customers as well as to residents in areas where he intended to deliver. Ads were placed in newspapers where he felt he had a fertile field and several billboards were erected. In addition, he painted a large sign on the main wall of his building.

All Traffic Passes Door

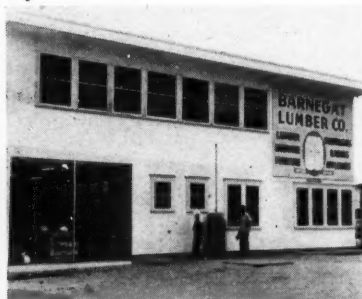
Ship Bottom is located on Beach Haven Island which has only one causeway to the mainland. This causeway leads onto the main boulevard and it is here that the Barnegat Lumber Co. is located. Thus all traffic on and off the island must pass the store and see the identifying signs.

As this island enjoys a large vacation business, Mr. Mathews maintains direct contact with home owners, real estate agents and others when houses or apartments are being leased. These new tenants are then contacted for gas service.

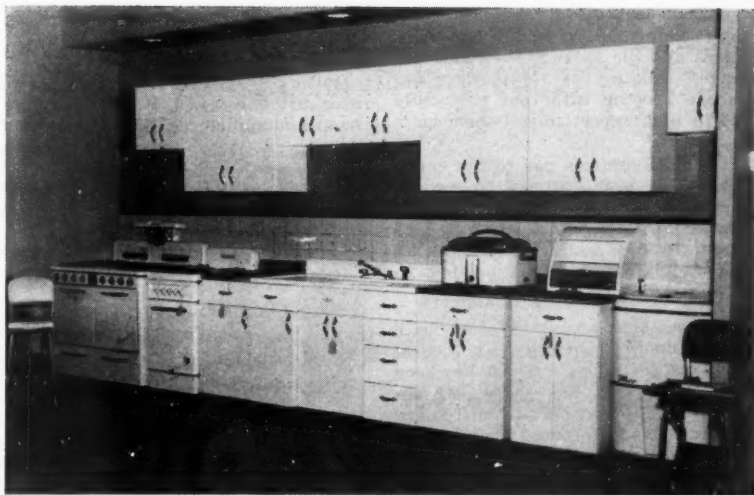
"Within four years we have built up a gas business that serves over 600 customers," says Mr. Mathews. "We enjoy a heavy seasonal business from vacationers as they don't have to worry about opening accounts with the local utility."

"Many tenants here just come on weekends or other intervals, and bottled gas is their best fuel. We just make the installation and they're all set."

Bottled gas is also sought by the



Herman Mathews (right), owner of Barnegat Lumber Co., Ship Bottom, N. J., points out own apartment hook-up at side of office building.



All-bottled gas kitchen has aided sales of appliances by Barnegat Lumber Co.

island's permanent residents. In fact, even more so since a hurricane and storm disrupted the utility's service several times. With all these factors in favor of bottled gas, Barnegat Lumber lost no time in making the most of their sales opportunities.

Installations are made at \$26.75. Leasing the equipment is \$16.75 and the installation charges are \$10. Then the customer pays for the gas. Practically 100% of all the installations are double, automatic throw-over hook-ups.

In an effort to get customers to use more bottled gas and to add appliances, the firm has a sliding schedule of rates to boost up this sales activity. Customers with one appliance pay the flat rate of \$13 per cylinder. Customers with two appliances pay \$9.25 per 100-lb. cylinder and those with three or more appliances pay

\$8.50 for the first six cylinders, \$7.50 for next six and \$6.50 thereafter. This gas, however, must be consumed within a one-year period and then the customer starts over again.

In an effort to convert customers to bottled gas use, the firm makes it a policy to promote the conversion of the city gas ranges in the homes to bottled gas. They are only interested in starting off the customers and helping them avoid the hardship of trading in their present range or buying a new one. Thus conversions are the Barnegat Lumber Co.'s path to least resistance in promoting bottled gas sales.

The firm charges \$1 per burner and a flat \$2.50 for water heaters. After the customer has been using gas for a few months, promotional overtures are made to buy new appliances or additional ones.

"About 60% of our customers have more than one appliance in their homes and the balance have only the range," relates Mr. Mathews. "But we are keeping after our customers and in time expect to sell them more appliances."

The firm supplies gas to the entire Beach Haven Island and to various parts of the mainland, such as Manahawkin, Cedar Run, Mayetta and other sections that are within a 25 mile radius of the firm's location.

Keeps Close Tab On Customers

All customers are supplied with postals upon which they can request gas when their first cylinder has been emptied or they can phone. As the firm keeps records of its customers, trips are made to those that haven't requested gas in the usual time and in this way service continues to them uninterruptedly.

The firm uses two pick-up trucks and makes exchanges of cylinders. Once a week, a trip is made to the Socony-Vacuum station in Paulsboro, N.J., where the cylinders are painted and re-filled. With the gas business increasing, the firm is making arrangements to install a storage tank and will do its own painting and re-filling so that it will have full control over this phase of the business on their own grounds.

A good sales plan followed by the company is the display of a complete kitchen in the store. This kitchen features a bottled gas range, water heater and refrigerator. Mr. Mathews has found it easier to sell appliances from this type of display than from pictures, printed matter and other methods. Customers can see the entire layout for themselves!

"We don't handle any other appliances than those for gas," says Mr. Mathews. "This has helped to make us a bottled gas headquarters."

Expansion Continues For Northwest Distributor

Since its organization in July, 1950, as a distributor of gas heating equipment and appliances, the John Condon



FRANK PETERSON

Co. of Seattle, Wash., under the direction of John Condon, has expanded its territory to cover Washington, northern Idaho, and British Columbia. The Canadian operations of the company are now extending into the province of Alberta.

In November, Frank Peterson was appointed director of sales in eastern Washington and northern Idaho, working out of Spokane. Mr. Peterson has had extensive experience in the industry having been associated with Consolidated Gas Co. and Valley Gas & Appliance Co., both in Washington, and Fuelite Natural Gas Corp. and Home Gas Corp., in Massachusetts. More recently he was in the sales department of Carson Nu-Gas Co., Carson City, Nevada.

New Standards Must Be Met By Arkansas LPG Dealers

Arkansas dealers are now required to prove to the Boiler Division, State Department of Labor, that they have adequate storage and are able to serve consumers during the winter months before they are allowed to deliver LPG in the state.

Another change in Arkansas legislation requires a 100% automatic shutoff valve to be installed on heaters in transient locations.

Plan Better Customer Relations Through Employee Meetings

IT'S all right to preach the importance of employee meetings for the LP-Gas industry, but it isn't always easy to actually conduct such sessions.

"How do we go about it, and how can one keep things going?" asks one reader.

So here is an outline of an imaginary group meeting, with the dealer conducting and employees participating in the free and easy manner they can be counted upon doing when subject matter is within the scope of their experience.

Assume that the dealer has notified his men of the regular (?) meeting on a given day. Informally, he starts the program moving:

Dealer: Is it warm enough for you? Miss Jones, will you please handle all telephone calls, as we do not want to be disturbed? This meeting was called so we can discuss one of our greatest problems. If we can solve this one problem our customers will be better satisfied, your work will be even more pleasant, and sales will soar.

Here's the problem—how to have good relations with all of our customers. Good customer relations can be the difference between failure and success in any business.

What is meant by good customer relations? It's finding out what people like and doing more of it, and finding out what people do not



By **BILL N. NEWMAN**

Director, Fort Worth Retail Institute and
President, Fort Worth Retail Personnel Assn.

like and doing less of it. Now what have you found that the public likes and, because of that, we should continue to do?

Serviceman: On muddy days I offer to take off my shoes before entering a nice home. Some customers want me to do this, while others say it is not necessary if I wipe my shoes off before entering. I've found that customers like for me to ask this question; it seems to flatter them.

Dealer: That's the idea! That kind of thing makes for good relations. Thank you, Jim. Yes, Charlie?

Serviceman: I've noticed that customers like for me to tell them what was wrong with an appliance



Don't barge into the kitchen with muddy shoes.

after I have serviced it. For example, I told Mrs. Wilson at Greenpoint yesterday that her room heater was merely getting a little too much air. Mrs. Wilson probably didn't know what I meant by that, but she knows that nothing was seriously wrong. Also, it gave me a chance to assure her that she had a good heater; I did a brief job of reselling her on the appliance.

Dealer: Mighty good, Charlie. You show the customer that you know your business when you tell her what was wrong. It inspires confidence in both you and the appliance. All of us who make service calls should follow your suggestion. How about you installation men?

Installation Man: I know of one thing we can do to help. When we install underground tanks we should ask the new customer if she

wants the excess dirt removed; it's an eyesore. They sometimes want us to fill in low places with it or haul it off.

Dealer: That's right, John. And it takes only a few minutes more to do the job right. What else?—yes, Bob.

Installation Crew Chief: Working under houses is a dirty job. Some of us think that because we're going to get dirty we should start the day that way. My wife has a clean uniform for me every day, and everyone of the fellows on my crew has agreed to change every day. Because a guy works like a gopher is no reason for him to smell like one.

Dealer: Your crew is outstanding in that respect, Bob. If the rest of us do as much toward clean and neat appearances, we'll do all right. An installation man can at least start the day looking clean. As for fuel truck drivers, they start smelling like fuel if they do not change daily. If someone would put a match to a uniform that has been worn three or four days, the driver wearing it would probably go up in smoke. I believe your hand was up first, Chuck.

Fuel Truck Driver: You've told us we should drive carefully because of the safety angle, but I've found that the general public respects us for courteous driving. When heavily loaded I lose a lot of speed on a hill. This means that the cars behind me have to slow down, too. If there is a good shoulder on the highway, I pull over on it and wave by the cars behind me. They always seem to appreciate it.

Then when the ground is wet I am very careful about driving on the customer's property to fill a tank; we can surely tear up his yard for him.

Dealer: Thank you, Chuck. Yes, the way you drive can hurt us or help us. I knew a druggist in Center City who spent a lot of money trying to have good public relations. His sales clerks were well trained, he did much advertising, and he personally participated in many civic affairs. His whole public relations program was ruined, however, because of the darned fool kid he hired to drive his delivery jeep. The kid would race by other cars, cut in front of other drivers, and give pedestrians a run for their money. On the jeep, painted in big red letters, was the name of the drug store. People didn't get mad at the kid; they got mad at the store.

Fuel Truck Driver: Most of the customers I serve want me to knock on the door, thank them for their business, and leave their ticket at that time. Only a few want me to leave the ticket without contacting them if they are at home at the time of delivery.

Another Fuel Truck Driver: That may be true on your route, but some of my customers don't want to be bothered. They say for me to leave the ticket without disturbing them. One old lady gets mad if I call her to the door.

Dealer: There's a problem, all right, but I think we can solve it. In a survey made this year the Texas Butane Dealers' Association asked 10,000 customers about this.

Here are the answers:

99.8% of the customers who replied said that they wanted a ticket left after fuel was delivered. Since we have always left tickets, we are o.k. in that respect.

65% of the customers said that they liked for the driver to contact them and thank them for the business, while the remaining 35% prefers not to be bothered.

53%, a little more than half, want to sign the delivery ticket; whereas, the other 47% reported that it did not matter.

We can assume that our customers want about the same treatment that LP-Gas customers in Texas do. Outside of the fact that Texans brag about their State, they are almost normal.

Let's find out which customers want to be contacted, if home at the time of fuel delivery, and which ones want to sign the ticket if at home. If those who want to sign delivery tickets are permitted to do so, there is less chance of misun-



Do you want the dirt removed or left where it is?

derstandings when bills are received.

Will you do that for us, men? Ask each customer you serve, and mark their answers on their cards in your books. Then we can do exactly what the customer wants us to do. Be careful, though, that you do not talk the customer into accepting fuel only when he is at home.

What can we do in the office that will improve relations with the public?

Bookkeeper: I believe our telephone procedure can be better. A lady came in yesterday to learn the amount of her bill. She said she had telephoned me several days ago and left her number. I didn't return her call because I did not get her message. Why don't we work out some system that will be foolproof, assigning specific responsibilities? Maybe we need a switchboard.

Dealer: You are right, Miss Farley. Our telephone procedure could be improved. Since you are the office manager, Fred, will you study that problem and let me know what should be done? For one thing, our manners over the phone are not as good as they should be. When someone called for you the other day, Fred, I caught myself saying, "He's not here; you'll have to call him at the warehouse." Imagine my telling a customer, or any other member of the public, what he would *have to do*. There's a 25-minute sound motion picture named "Telephone Courtesy" that is available (free of charge from most telephone companies in the

United States). Would you like for Fred to get that and show it for us?

Several Persons: Yes.

Dealer: All right. Now what else can be done to make people want to trade with us?

Assistant Manager: The proper handling of complaints should come in somewhere. When a customer complains, he is at a crossroad. We can handle his complaint well and keep his business, or we can lose the business right then. Here is my method of handling a complaining customer:

First, I let the customer tell me all about his objection, being careful not to interrupt. I do my best to be open minded about it; after all, his gripe may be justified.

Second, I restate the facts without arguing and ask him exactly what it is that he wants us to do.

Third, I suggest a solution(s) that is fair to both the customer and our firm. Incidentally, I've learned that most customers do want to be fair.

Fourth, I put the solution into effect right away so that the customer will feel that we have followed through on the matter.

Dealer: That's good, Mr. Keith! Your four-step plan is all right. We should never dread a complaint, because a complaining customer is doing us a favor. He's giving us a chance to satisfy him, when he very easily could give a competitor that opportunity.

Salesman: The last time I got in trouble with a customer it was because I had charged him more money per opening to pipe his

house than I did a neighbor of his. The two compared notes and I caught the devil. He was right, too—I had charged him a dollar and a half more per opening than his neighbor. There was a reason for it, though. His neighbor had two sets of openings that were back-to-back and his house was much easier to work under. Boy, I had a hard time explaining that.

From now on I suggest that we write up our orders some other way, rather than so much per opening. I now turn them in as "Piping, including six openings—so many dollars." Before that trouble, I wrote them up as "Six openings—each at so many dollars."

Dealer: That's a good point, Fleming. We should eliminate every chance for customer dissatisfaction. Will all of you salesmen take Fleming's suggestion? Good.

Salesman: I heard of a stunt that a veterinarian in another city pulled last year. He mailed Christmas cards to all the dogs and cats that had been his customers. Of course Spot and Rover couldn't read the cards, but their owners could. It was good customer relations and it brought him good repeat business.

Dealer: That's a new one, Sam. Perhaps we can think of something almost as clever. It surely wouldn't hurt us to send Christmas cards to all of our customers. Anything that makes the customer feel important or feel appreciated is worth the trouble. It can be something simple, such as smiling or calling a customer by name.

As for what others have done in



Better satisfy your own cranky customers—
or your competitor will.

this regard, a major automobile manufacturer practiced this slogan, "Never forget a customer, and never let a customer forget you." This policy helped put their automobile at the top of the sales list for years. But here's something for all of us to remember: how well we treat a customer makes some difference; however, it's how the customer feels we have treated him that really counts.

We have covered only a few of the many things we can do to have better customer relations. Let's come up with some more ideas at our next meeting. In the meantime, please put into practice all of the suggestions you made today. Thanks for the good work you are

doing. Let's see just how good our customer relations can be.

Covered At The Meeting

Offer to remove shoes before making a service call in a nice home on a wet day.

After adjusting an appliance, tell the customer what was wrong with it. Resell her on it.

After installing an underground tank, ask the customer if he wants the excess dirt removed.

Clean uniforms make a difference.

Courteous driving is good public relations.

Drivers should learn which fuel customers want them to make personal contact after filling the tank, provided the customer is at home, and then act accordingly.

Drivers should learn which customers prefer to sign for fuel if home at the time of delivery.

Check telephone procedure and your telephone courtesy.

A complaining customer should be welcomed, as he could take his complaint to a competitor.

When writing an order that includes piping, do not list a charge of so many dollars per opening.

Never forget a customer, and never let a customer forget you.

How well you treat a customer makes some difference, but it's how the customer feels you have treated him that really counts.

Caravan Exhibits Weatherhead Products to Dealers

The Weatherhead Co.'s L. P. gas "Sales Caravan" recently completed a tour of six major cities along the Eastern Seaboard. Its purpose was to

acquaint dealers with the latest advancements in the Weatherhead line of equipment.

The itinerant show featured Weatherhead cylinders, the new greater flow capacity 2½" regulator, a new vapor valve and an automatic bottle filling unit in actual operation. Weatherhead engineers and salesmen were on hand at each exhibit to give full details of the new products.

The complete tour gave dealers from Maine to Miami a chance to get first-hand information on the most recent Weatherhead developments. Cities covered were Boston, New York, Orlando, Tampa and Miami, Fla.; and Gulf Port, Miss. The show was so successful that two additional trips have been scheduled to include North Carolina and Tennessee.

Tom Clark, Carburetor Expert, Joins Anchor Petroleum Co.

R. L. Cole, Western division manager, Anchor Petroleum Co., announces the appointment of Thomas

R. Clark as a special sales engineering representative covering the seven Western states. His work will center principally on the development of summer commercial and industrial business to help balance the winter peak loads.



TOM CLARK

For the past several years Mr. Clark has been engaged in sales and field service work, including dealer training, for Century Gas Equipment Co. In this connection he is widely known throughout the United States, Canada, and Mexico.

PRACTICAL MANAGEMENT

OF AN LP-GAS BUSINESS

CHAPTER 10

Gas Rates By The Gallon

BEAR in mind that we are still going along with the fact that electricity is our biggest and most dangerous competitor. It, with oil and gas are the three convenience fuels that bid for the profitable fields of cooking and water heating. Oil is not such a serious factor in these two fields so we have not considered it heretofore, but the man who goes out for gas business with a tank truck to fill large storage containers upon the customer's premises is in a position to give the oil peddlers a headache.

The argument within our industry as to the best method of delivering liquefied petroleum gases has grown in intensity. The fact that in New Jersey, piped gas, bulk delivery liquefied petroleum gas and bottled gas all live

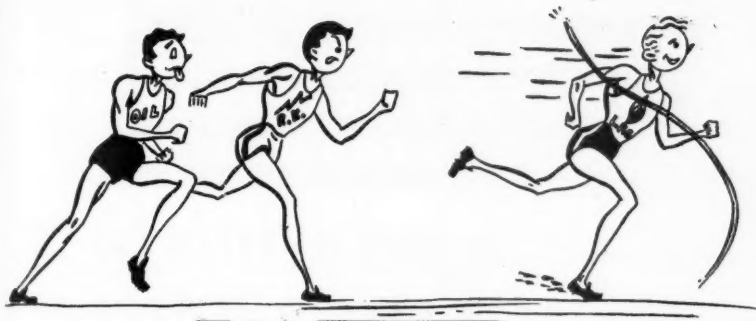
side by side and prosper is evidence that there is room for all types of gas service. Each is adapted to some particular segment of consumer demand. I shall have more to say about this subject later.

First I shall continue in comparison of the typical electric rate mentioned in Chapter 7 with what those who sell by the gallon must do to meet electric competition. Table 16 has been computed with that solely in mind. Again we go back to the electric division of kilowatts for domestic cooking and water heating. The 100 kwh assigned to cooking is equivalent to $100/20.09 = 4.97$ gallons of propane (see Table 8 for the 20.09 value)

By C. C. TURNER

A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.
GAS PER MO.	COOK-ING	WOULD COOK-ING	GAS. PROPANE LEFT	GAS AT 39.50¢	WOULD SELL FOR	GAS AT 19.75¢	WOULD SELL FOR	TOTAL \$ MONTHLY	PRICE IN CENTS PER GALLON	NUMBER OF GALLONS PER YEAR
10	4.97	2.45	5.03	2.27	0.90	2.76	.55	3.90	59.00	120
20	4.97	2.45	15.03	2.27	0.90	12.76	2.52	5.87	25.55	240
30	4.97	2.45	25.03	2.27	0.90	22.76	4.49	7.84	26.15	360
40	4.97	2.45	35.03	2.27	0.90	32.76	6.47	9.82	24.55	480
50	4.97	2.45	45.03	2.27	0.90	42.76	8.44	11.79	23.58	600
60	4.97	2.45	55.03	2.27	0.90	52.76	10.42	13.77	22.95	720
70	4.97	2.45	65.03	2.27	0.90	62.76	12.39	15.74	22.48	840
80	4.97	2.45	75.03	2.27	0.90	72.76	14.37	17.72	22.15	960
90	4.97	2.45	85.03	2.27	0.90	82.76	16.34	19.69	21.87	1080
100	4.97	2.45	95.03	2.27	0.90	92.76	18.32	21.67	21.67	1200
110	4.97	2.45	105.03	2.27	0.90	102.76	20.29	23.64	21.49	1320
120	4.97	2.45	115.03	2.27	0.90	112.76	22.27	25.62	21.35	1440
130	4.97	2.45	125.03	2.27	0.90	122.76	24.24	27.59	21.22	1560
140	4.97	2.45	135.03	2.27	0.90	132.76	26.22	29.57	21.12	1680
150	4.97	2.45	145.03	2.27	0.90	142.76	28.19	31.54	21.02	1800
160	4.97	2.45	155.03	2.27	0.90	152.76	30.17	33.52	20.95	1920
170	4.97	2.45	165.03	2.27	0.90	162.76	32.14	35.49	20.87	2040
180	4.97	2.45	175.03	2.27	0.90	172.76	34.12	37.47	20.81	2160
190	4.97	2.45	185.03	2.27	0.90	182.76	36.09	39.44	20.75	2280
200	4.97	2.45	195.03	2.27	0.90	192.76	38.07	41.42	20.71	2400
210	4.97	2.45	205.03	2.27	0.90	202.76	40.04	43.39	20.66	2520
220	4.97	2.45	215.03	2.27	0.90	212.76	42.02	45.37	20.62	2640
230	4.97	2.45	225.03	2.27	0.90	222.76	43.99	47.34	20.58	2760
240	4.97	2.45	235.03	2.27	0.90	232.76	45.97	49.32	20.55	2880
250	4.97	2.45	245.03	2.27	0.90	242.76	47.94	51.29	20.51	3000
260	4.97	2.45	255.03	2.27	0.90	252.76	49.92	53.27	20.48	3120
270	4.97	2.45	265.03	2.27	0.90	262.76	51.89	55.24	20.45	3240
280	4.97	2.45	275.03	2.27	0.90	272.76	53.87	57.22	20.45	3360
290	4.97	2.45	285.03	2.27	0.90	282.76	55.84	59.19	20.41	3480
300	4.97	2.45	295.03	2.27	0.90	292.76	57.82	61.17	20.39	3600

Table 16. Prices per gallon at which propane would have to sell in order to be competitive to electricity in cooking and water heating and space heating with electricity costing 5c per kwh for the first 15 kwh, 2c per kwh for the next 130 kwh, and all above this amount at 1c kwh. Energy ratio 20.09 kwh to the gallon in cooking and 19.75 kwh to the gallon in water heating and space heating. (See Tabler 9 and 13.)



Oil is not such a serious competitor in the cooking and water heating fields.

and can cost \$2.45. The 340 kwh assigned to water heating is equivalent to $340/19.75=17.21$ gallons of propane (see Table 9 for the 19.75 value) and can cost \$3.85. Table 17 is a continuation of Table 16 in the larger quantity brackets. Here again I have chosen the long way around in computing this competitive rate in order that you might understand each step in the process.

Column "A" is in gallons per month so it will be on the same time basis as the electric rate. Column "B" represents the number of gallons of propane which is equivalent to the 100 kwh used for cooking. Column "C" is the cost of 100 kwh of electricity and also the price which may be charged for 4.97 gallons of propane. Column "D" lists the number of gallons of propane left over for water and space heating or other uses. Column "E" shows the number of gallons listed in Column "D" which could be sold at the equivalent of 2 cents per kwh. Column

"F" lists the value of the gallons of propane in Column "E." Column "G" gives the number of gallons of propane remaining that would have to be sold at a price to equal electricity at 1 cent per kwh; and column "H" is the value of the gallons in Column "G" based on electricity at 1 cent per kwh. Column "I" is the sum of columns "C", "F" and "H". It is the price that could be charged for the quantity of propane shown in Column "A", without exceeding the monthly electric bill at the rates selected in Chapter 7. Column "J" is the price per gallon, and was computed by dividing Column "I" by Column "A". Column "K" is the number of gallons per year that would entitle the customer to the rate appearing in Column "J".

Those who sell by the gallon from tank trucks can employ any one of several methods in pricing gas to the consumer. If they do not run the routes on regular monthly delivery schedules and do not wish to use meters for determining the

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The RegO line of standard Outfits for Portable Cylinder Systems offers you a complete range of types from which you can select exactly the right outfit to meet the requirements for all of your installations.

When you specify RegO you assure yourself of outfits that give . . .

- dependable performance under all operating conditions
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—economy through the elimination of frequent and costly service calls.

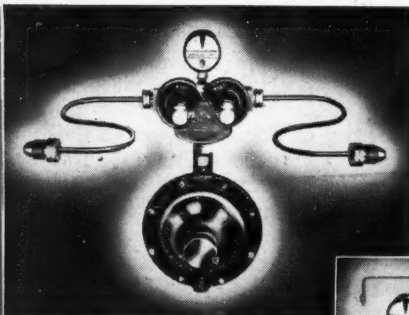
You gain these important advantages with "RegO"—the byword for quality since the very first days of the LP-Gas Industry.

Yes, whether you deliver ten cylinders a day or a thousand, your customers will get top performance from every single one when you use RegO control equipment!

RegO Series No. 4746 Automatic Outfits

The utmost in dependability and convenience for the homeowner . . . sensitive two-stage pressure reduction insures constant pressure year 'round to appliances . . . automatic manifold switches to "reserve" cylinder when "service" cylinder becomes empty or when pressure drops too low due to heavy load demand . . . indicator gauge shows red warning when empty cylinder should be replaced.

Outfits consist of: No. 2503B9 large capacity regulator, No. 2523D automatic manifold with direct-mounted gauge, two pigtails with POL connections both ends. Outfits also available with No. 2403B9 medium capacity regulator in place of No. 2503 large capacity regulator. Mounting bracket optional.

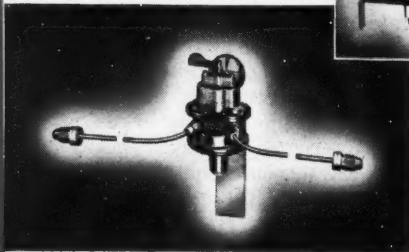


These outfits are also available with remote indicating gauge. Furnished with tubing and bracket for mounting outside kitchen windows.

RegO Series No. 5774 Automatic Outfits

Combination regulator-manifold in a low cost single compact assembly . . . accurate two-stage pressure reduction . . . provides dependable uninterrupted gas service by automatically switching to "reserve" cylinder when "service" cylinder becomes empty, or when pressure becomes too low because of a heavy load . . . red warning on indicator tells user to order replacement for empty cylinder.

Outfits consist of: No. 2419BD combination regulator-manifold, mounting bracket, two pigtails with $\frac{1}{4}$ " inverted flare connections one end and POL connections other end.

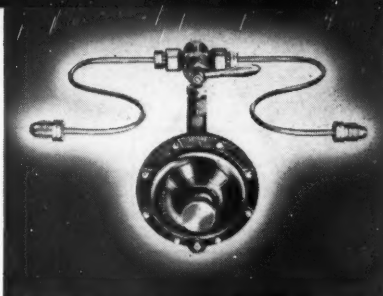


RegO Series No. 4726 Manual Outfits

Popular because of simple, positive operation . . . two-way manual throwover manifold shuts off one side of system as the other side is simultaneously opened . . . position of lever indicates cylinder in use.

Outfits consist of: No. 2503A9 large capacity regulator, No. 2521T manual manifold, two pigtails with POL connections both ends.

Outfits also available with No. 2403A9 medium capacity regulator in place of No. 2503A9 large capacity regulator. Mounting bracket optional.

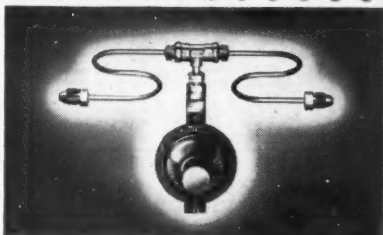


RegO Series No. 4715 Check Valve Outfits

Designed to give safety and dependability at relatively low cost . . . forged manifold block incorporates a check valve which prevents gas leakage from the full cylinder while the empty one is being replaced . . . gas flow to appliances is not interrupted while cylinders are being changed.

Outfits consist of: No. 2403A9 medium capacity regulator, No. 1350R check valve manifold, two pigtails with POL connections both ends.

Outfits also available with No. 2503A9 large capacity regulator in place of No. 2403A9 medium capacity regulator. Mounting bracket optional.

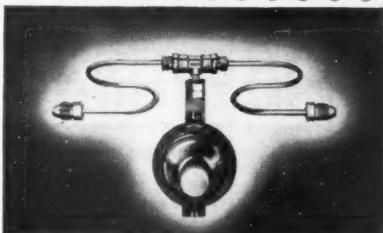


RegO Series No. 6715 Check Valve Outfits

Construction and function essentially the same as No. 4715 Outfits above . . . lower price is achieved by connecting the manifold directly to the regulator, thereby eliminating the cost of the POL connection normally used.

Outfits consist of: No. 2403A2 medium capacity regulator, No. 1350RD check valve manifold, two pigtails with POL connections both ends.

Outfits also available with No. 2303A2 small capacity regulator in place of No. 2403A2 medium capacity regulator. Mounting bracket optional.

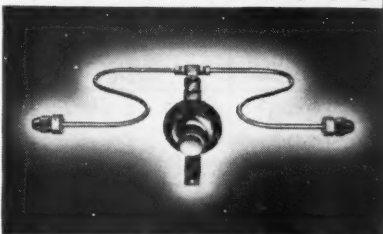


RegO Series No. 5714 Check Valve Manifolds

Recommended for installations where low cost without sacrifice of utility is essential . . . Manifold connects directly to regulator body.

Outfits consist of: No. 2303A2 small capacity regulator, No. 1450R check valve manifold, mounting bracket, two pigtails with $\frac{1}{4}$ " inverted flare connections one end and POL connections other end.

Outfits also available with No. 2403A2 medium capacity regulator in place of No. 2303A2 small capacity regulator.



Pigtails for all outfits are available straight or bent to S or loop shape. Wrench and chain optional for all outfits.

REGO
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GAS EQUIPMENT CO.
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PRECISION EQUIPMENT FOR USING
AND CONTROLLING LP-GASES

MEMBER
national
LP-GAS PROFESSIONAL
program

GALLONS OF PROPANE PER MONTH	GALLONS EQUIVALENT 5¢ & 2¢ ELECTRICITY	THESE GALLONS WOULD SELL FOR \$	GALLONS PROPANE LEFT AT 19.75¢	THESE WOULD SELL FOR \$	TOTAL MONTHLY PROPANE BILL \$	PRICE PER CENTS IN GALLONS	NUMBER OF GALLONS PER YEAR
400	7.24	3.35	392.76	86.52	80.92	20.23	4,800
500	7.24	3.35	492.76	97.32	100.67	20.13	6,000
600	7.24	3.35	592.76	117.07	120.42	20.07	7,800
700	7.24	3.35	692.76	136.82	140.17	20.03	8,400
800	7.24	3.35	792.76	156.57	159.92	19.99	9,600
900	7.24	3.35	892.76	176.32	179.67	19.96	10,800
1000	7.24	3.35	992.76	196.07	199.42	19.94	12,000
1100	7.24	3.35	1092.76	215.82	219.17	19.92	13,200
1200	7.24	3.35	1192.76	235.57	238.92	19.91	14,400
1300	7.24	3.35	1292.76	255.32	258.67	19.89	15,600
1400	7.24	3.35	1392.76	275.07	278.42	19.88	16,800
1500	7.24	3.35	1492.76	294.82	298.17	19.87	18,000
1600	7.24	3.35	1592.76	314.57	317.92	19.87	19,200
1700	7.24	3.35	1692.76	334.32	337.67	19.86	20,400
1800	7.24	3.35	1792.76	354.07	357.42	19.85	21,600
1900	7.24	3.35	1892.76	373.82	377.17	19.85	22,800
2000	7.24	3.35	1992.76	393.57	396.92	19.84	24,000
2500	7.24	3.35	2492.76	492.32	496.67	19.82	30,000
3000	7.24	3.35	2992.76	591.07	594.42	19.81	36,000
3500	7.24	3.35	3492.76	689.82	693.17	19.80	42,000
4000	7.24	3.35	3992.76	788.57	791.92	19.79	48,000
4500	7.24	3.35	4492.76	887.32	890.67	19.79	54,000
5000	7.24	3.35	4992.76	986.07	989.42	19.78	60,000
5500	7.24	3.35	5492.76	1084.82	1088.17	19.78	66,000
6000	7.24	3.35	5992.76	1183.57	1186.92	19.78	72,000
6500	7.24	3.35	6492.76	1282.32	1285.67	19.77	78,000
7000	7.24	3.35	6992.76	1381.07	1384.42	19.77	84,000
7500	7.24	3.35	7492.76	1479.82	1483.17	19.77	90,000
8000	7.24	3.35	7992.76	1578.57	1581.92	19.77	96,000
8500	7.24	3.35	8492.76	1677.32	1680.67	19.77	102,000
9000	7.24	3.35	8992.76	1776.07	1779.42	19.77	108,000
9500	7.24	3.35	9492.76	1874.82	1878.17	19.77	114,000
10,000	7.24	3.35	9992.76	1973.57	1976.92	19.76	120,000

Table 17. Prices per gallon at which propane would have to sell in order to be competitive to electricity in cooking, water heating, and space heating with electricity costing 5c per kwh for the first 15 kwh, 2c per kwh for the next 130 kwh and all above this amount at 1c per kwh. Energy ratio 20.09 kwh to the gallon in cooking and 19.75 kwh to the gallon in water heating and space heating. (See Tables 9, 13, and 16.)

monthly demand of the consumer, they can use a flat method of pricing similar to the following.

Let us assume a customer who will need 1672 gallons per year. Referring to Column "K" we find 1672 gallons is between 1560 and 1680 so the rate for 1560 gallons should be applied. This is 21.22 cents per gallon as shown on the same line in Column "J". If the customer only used 760 gallons in the first calendar or Price-Scale-Year his price in the following year would be 22.95 cents per gallon, 760 gallons taking the 720 gallon rate.

Don't Throw Away Profits

Conversely, if he used 2719 gallons his price in the next calendar or Price-Scale-Year would be 20.62 cents per gallon, 2719 being more than 2640 but less than 2760. Of course there are operators who set a flat price per gallon regardless of the quantity involved, but this has never seemed to be good business to me. Why throw away legitimate profits by establishing a price any lower than is necessary to meet competition?

There are other operators who use meters on each installation and the meters are read regularly each month. In such cases one of the rates shown in Chapters 8 or 9 should be employed, depending upon the unit of measurement involved and the method of pricing it.

Probably you have noticed that in suggesting prices per gallon at which propane gas could be sold on a competitive basis I have car-

ried out the computations into tenths and hundredths of a cent. This follows the practice of gasoline and oil dealers throughout the country today. As examples, at the present time up here in Portland, Maine, we are paying 26.4 cents per gallon for high test gasoline and 12.4 cents per gallon for No. 2 furnace oil. The operator who delivers gas by the gallon is dealing as a rule in large deliveries, and differences of a few fractions of a cent make a considerable difference in the amount which he receives from the customer over a period of one year.

So we come to the subject of oil and space heating which intrigues the fellow who is engaged in bulk delivery. He feels that he should be able to do something in competition to the oil man, and so he should if he doesn't try to swap Btu's on an even exchange basis.

Heat Contents Compared

Right here I suggest that you read carefully Chapter 19 of "The Bottled Gas Manual,"* entitled "Competitive Fuels—Oil." Take particular notice of "Table 1. Heat Contents of Fuel Oils" on Page 253. Note that the approximate heat content of No. 2 furnace oil is 141,800 Btu. Next turn to Table 1 in Chapter 1 on Page 5 of that same book and note that the heat content of one gallon of propane is approximately 91,686 Btu's.

It is a simple problem in mathematics to determine that if you

*Published by BUTANE-PROPANE News.

IF THE PRICE OF NO. 2 OIL IS CENTS PER GALLON	AND YOUR PRICE IS CENTS			
	PER GALLON	PER POUND	PER DECITHERM	PER 100 CUBIC FEET
7.0	12.6	2.97	1.37	34.07
7.1	12.78	3.02	1.39	34.55
7.2	12.96	3.06	1.41	35.04
7.3	13.14	3.10	1.43	35.53
7.4	13.32	3.14	1.45	36.01
7.5	13.50	3.19	1.47	36.50
7.6	13.68	3.23	1.49	36.99
7.7	13.86	3.27	1.51	37.47
7.8	14.04	3.31	1.53	37.96
7.9	14.22	3.36	1.55	38.45
8.0	14.40	3.40	1.57	38.93
8.1	14.58	3.44	1.59	39.42
8.2	14.76	3.48	1.61	39.91
8.3	14.94	3.53	1.63	40.40
8.4	15.12	3.57	1.65	40.88
8.5	15.30	3.61	1.67	41.37
8.6	15.48	3.65	1.68	41.86
8.7	15.66	3.70	1.70	42.34
8.8	15.84	3.74	1.72	42.83
8.9	16.02	3.78	1.74	43.32
9.0	16.20	3.82	1.76	43.80
9.1	16.38	3.87	1.78	44.29
9.2	16.56	3.91	1.80	44.78
9.3	16.74	3.95	1.82	45.26
9.4	16.92	4.00	1.84	45.75
9.5	17.10	4.04	1.86	46.24
9.6	17.28	4.08	1.88	46.72
9.7	17.46	4.12	1.90	47.21
9.8	17.64	4.17	1.92	47.70
9.9	17.82	4.21	1.94	48.18
10.0	18.00	4.25	1.96	48.67
10.1	18.18	4.29	1.98	49.16
10.2	18.36	4.34	2.00	49.64
10.3	18.54	4.38	2.02	50.13
10.4	18.72	4.42	2.04	50.62
10.5	18.90	4.46	2.06	51.10
10.6	19.08	4.51	2.08	51.59
10.7	19.26	4.55	2.10	52.08
10.8	19.44	4.59	2.12	52.56
10.9	19.62	4.63	2.14	53.05
11.0	19.80	4.68	2.16	53.54
11.1	19.98	4.72	2.18	54.02
11.2	20.16	4.76	2.20	54.51
11.3	20.34	4.80	2.22	55.00
11.4	20.52	4.85	2.24	55.48
11.5	20.70	4.89	2.25	55.97
11.6	20.88	4.93	2.27	56.46
11.7	21.06	4.98	2.29	56.84
11.8	21.24	5.02	2.31	57.43
11.9	21.42	5.06	2.33	57.92
12.0	21.60	5.10	2.35	58.40
12.1	21.78	5.14	2.37	58.89
12.2	21.96	5.19	2.39	59.38
12.3	22.14	5.23	2.41	59.87

Table 18. Oil and propane gas prices at which one should investigate the possibility of heating by liquefied petroleum gas.

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are swapping Btu's, a gallon of propane would have to sell for 91,686/141,800 of the price of a gallon of No. 2 furnace oil, or 64.6% of its price. It is obvious that with oil at 14 cents per gallon, you cannot afford to sell propane at 9.044 cents per gallon.

This is a fact which discourages many liquefied petroleum gas dealers from going after space heating business. Furthermore, the manufacturers of oil burning space heating appliances make some astounding claims for the efficiency of their products, such as 70% efficiency for a pot type space heater as reported on Page 246 of "The Bottled Gas Manual." Some gas appliance manufacturers claim the same efficiency, so obviously there is something amiss when the gas appliance uses a much smaller flue and runs a lower stack temperature.

One thing I do know from actual experience. Up here in Maine with propane selling at 22.21 cents per gallon for space heating, we have plenty of instances where it is doing the heating job as cheaply as 141,800 Btu oil at 12.4 cents per gallon. Perhaps this may be because we have been more careful in engineering our jobs and insist on proper insulation, discarding such jobs as we know would not be reasonably conservative of precious heat units, but the fact remains that on these particular jobs, if the gas heating unit is 70% efficient then the oil unit which it replaced was operating at only 25% efficiency.*

Far be it from me to malign our oil cousins by any flat statement

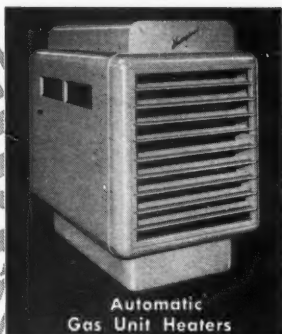
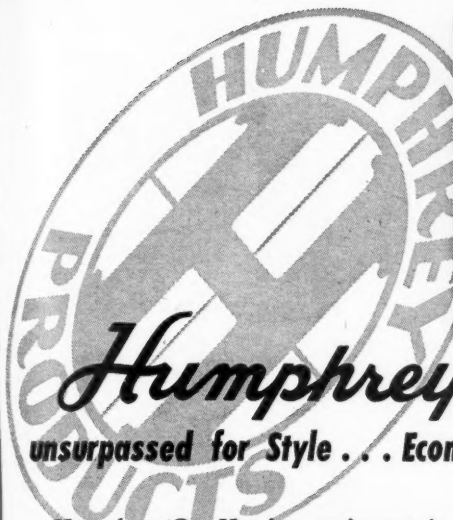
that they operate in space heating at an efficiency of only 25%, but I do know that if propane costs 1.8 times as much per gallon as oil does there are a lot of space heating jobs that you can take away from the oil man if you are attentive to all the matters of efficient application and conservation that he has missed. Table 18 will give you an idea of when you should begin to be interested in the oil man's customers. **W A R N I N G !** This doesn't mean that you can take on all heating jobs on the basis of the figures given. It does mean that there is a possibility of taking on some of them if the gas job is properly engineered and the building is capable of being efficiently heated in the gas way of heating.

Bulk delivery is also adapted to large commercial and industrial uses of liquefied petroleum gases but you will be in a precarious position if you base an entire bulk delivery program on these two potentialities, alone. I say this because of the rapidity with which

*For those who are mathematically inclined and curious to know how I arrive at this conclusion I submit the following. If the gas appliance is 70% efficient, it gets 70% of 91,686 or 64,180 useful Btu's out of every gallon of propane gas. If oil costs 12.4 cents per gallon, then the consumer buys $141,800/12.4=11,435$ oil Btu's for 1 cent. He could buy $22.21 \times 11,435=253,937$ oil Btu's for the 22.21 cents that a gallon of propane costs; but on equal results he would still be getting but 64,180 useful Btu's, so the efficiency of the oil unit would be $64,180/253,937=25\%$.

IF THE PRICE OF NO. 2 OIL IS CENTS PER GALLON	AND YOU PRICE IS CENTS			
	PER GALLON	PER POUND	PER DECITHERM	PER 100 CUBIC FEET
12.4	22.32	5.27	2.43	60.35
12.5	22.50	5.31	2.45	60.84
12.6	22.68	5.36	2.47	61.33
12.7	22.86	5.40	2.49	61.81
12.8	23.04	5.44	2.51	62.30
12.9	23.22	5.48	2.53	62.79
13.0	23.40	5.53	2.55	63.27
13.1	23.58	5.57	2.57	63.76
13.2	23.76	5.61	2.59	64.25
13.3	23.94	5.65	2.61	64.73
13.4	24.12	5.70	2.63	65.22
13.5	24.30	5.74	2.65	65.71
13.6	24.48	5.78	2.67	66.19
13.7	24.66	5.82	2.69	66.80
13.8	24.84	5.87	2.71	67.17
13.9	25.02	5.91	2.73	67.65
14.0	25.20	5.95	2.75	68.14
14.1	25.38	6.00	2.77	68.63
14.2	25.56	6.04	2.79	69.11
14.3	25.74	6.08	2.81	69.60
14.4	25.92	6.12	2.82	70.09
14.5	26.10	6.17	2.84	70.57
14.6	26.28	6.21	2.86	71.06
14.7	26.46	6.25	2.88	71.55
14.8	26.64	6.29	2.90	72.03
14.9	26.82	6.33	2.92	72.52
15.0	27.00	6.38	2.94	73.01
15.1	27.18	6.42	2.96	73.49
15.2	27.36	6.46	2.98	73.98
15.3	27.54	6.51	3.00	74.47
15.4	27.72	6.55	3.02	74.96
15.5	27.90	6.59	3.04	75.44
15.6	28.08	6.63	3.06	75.93
15.7	28.26	6.68	3.08	76.41
15.8	28.44	6.72	3.10	76.90
15.9	28.62	6.76	3.12	77.39
16.0	28.80	6.80	3.14	77.87
16.1	28.98	6.85	3.16	78.36
16.2	29.16	6.89	3.18	78.85
16.3	29.34	6.93	3.20	79.34
16.4	29.52	6.97	3.22	79.82
16.5	29.70	7.02	3.24	80.31
16.6	29.88	7.06	3.26	80.80
16.7	30.06	7.10	3.28	81.28
16.8	30.24	7.14	3.30	81.77
16.9	30.42	7.19	3.32	82.26
17.0	30.60	7.23	3.34	82.74

Table 18. (Continued) Oil and propane gas prices at which one should investigate the possibility of heating by liquefied petroleum gas.



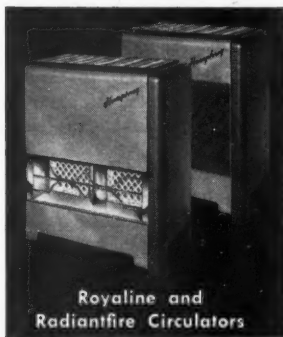
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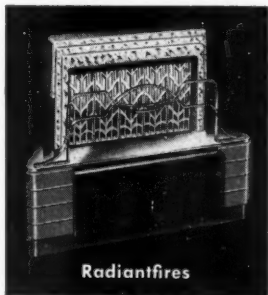
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Humphrey Gas Heating equipment is backed by a 50-year tradition of quality. Because this company has been building gas heating equipment *exclusively* for more than half a century, you can sell Humphrey products with confidence that there is no finer equipment made.

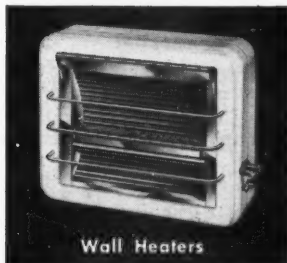
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Radiantfire Circulators



Radiantfires

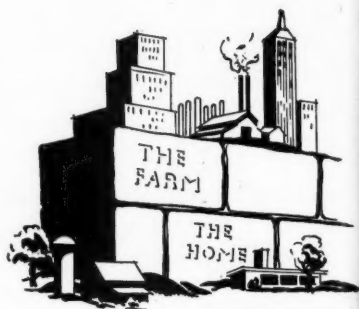


Wall Heaters

our American business picture changes.

Even a well founded manufacturing enterprise is apt to have its periods of inactivity which might leave you with an idle tank truck on your hands for considerable periods of time. Poultry brooding is an attractive field, but it is more or less seasonal and it can slough into terrific slumps due to market prices. Restaurant accounts are attractive but the turnover in management is considerable and credit experience has not been as a whole too satisfactory. Industrial processes are quite apt to change.

Gas for any of the purposes mentioned must be sold in large quantities at a small margin of profit. I may be old-fashioned in my concept of a well-founded liquefied petroleum gas business, but the foundation of our American economy is still the farm and the home, and no gas business appears to me to be safe unless a substantial portion of it comes from these two sources. Farm applications are increasing and liquefied petroleum gas has great potentialities on the farm for dairies, tractors, internal combustion power units used in irrigation, weed extermination, sterilization, land clearance, in addition to the conventional home uses of cooking, water heating, refrigeration and space heating. If you go into bulk delivery be sure that your operation is well founded upon dependable custom-



... The foundation of our economy is still the home and the farm ...

ers that will give you a steady volume of business over the years which are to come.

Once again I impress upon you that this and the preceding three chapters have had much to do with one specific electric rate. That rate is on the average, lower than the rate in many areas, but not as low as in some sections which enjoy electric subsidization from a benevolent, electric-minded government. You will have to establish your own rates for your own locality based on local electric rates.

Do not lose sight of one fact: your competition is electricity and will be increasingly so. Predicate your gas price schedule on local electric prices. Reddy Kilowatt is watching you. He will pick flaws in your rate structure if you give him any opportunity to do so!



"OPERATION DEFENSE"

We've been called upon to divert more and more of our production facilities to the preparedness program. Also, materials for American LP Gas products aren't as plentiful as they used to be.

We know you feel—as we do—that defense needs are of vital importance. But the LP Gas requirements of your customers

are important too. We will strive—to our utmost—to fill this double need for both defense and your LP Gas storage and transport requirements.

AMERICAN PIPE & STEEL CORPORATION

*Manufacturers of storage and transport
tanks for the LP Gas Industry*

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Safety-Planned Tank Trucks Uphold Industry Standard

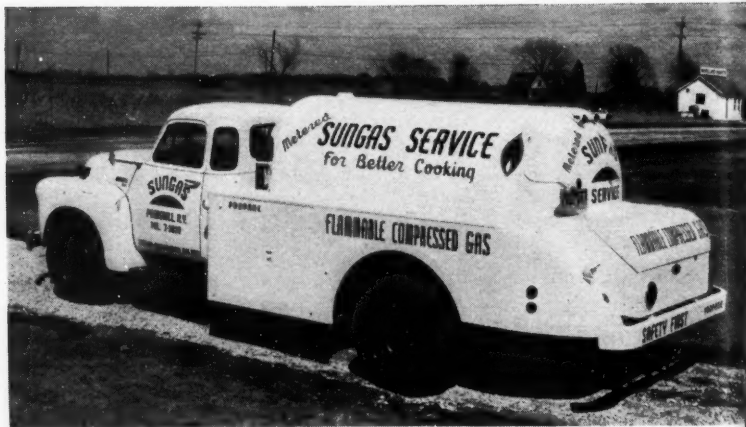
TO ASSURE and improve on the continued excellent safety record of the LP-Gas industry more and more time and study are being devoted to planning safer equipment and safer operating procedures. By using the safety devices available to our industry, and arranging them in proper fashion, the potential human error present in the handling of any flammable gas or liquid is greatly diminished. With these thoughts in mind the "Sungas" small tank truck fleet (up to 1600 w. g.) has been expanded.

The basic tank mounted on the

By **JACK H. STUDLEY**,
General Natural Gas Corp., New York City

truck chassis should conform to all pertinent industry codes and government regulations as well as the National Board of Fire Underwriters' Pamphlet No. 58. Units designed and built for the Sungas, and affiliated operations of General Natural Gas Corp., serving the Eastern states from the Canadian border through Florida, are planned to meet maximum not minimum requirements.

The latest unit constructed for



Custom-designed, 500-gal. tank truck for use in filling trailer camp cylinders by weight.

Sungas service in Putnam and Westchester counties of New York, by Butler Manufacturing Co., has a wide variety of safety features incorporated. This safety equipment also permits a more efficient distribution system for both the operator and the consumer, and so is a judicious policy from an economic viewpoint.

NBFU Requirements Met

Built for 200 lbs. working pressure, to ASME requirements, out of 70,000 lb. high tensile strength steel, the tank is fitted with forged steel couplings and fittings at the outlets and throughout the extra heavy black piping layout. All fittings meet the requirements of NBFU Pamphlet No. 58 and the unit has a final inspection certified by Hartford. The truck tank "Rego" relief valve is recess-mounted in the top of the tank and set to start-to-discharge at 250 lbs. pressure. The rotary gauge is also recessed and provided with a hinged protective cover over the well.

Electrical wiring is water proof and run through conduit. ICC running lights with reflectors are provided on the tank skirting, with front and rear directional signal equipment a standard installation. The rear of the tank and skirting also has the following lighting: three-light cluster, combination stop and tail light and a special large diameter "STOP" light.

A simple, positive device approved by the New York State Public Service Commission to prevent fires resulting from short circuits

—the "Mak-Saf" switch—is part of the extra equipment. Mounted on the fire wall of the vehicle it is connected to the dashboard by means of flexible cable. A pull on the handle breaks the electrical circuit to prevent fires in case of an accident, or disconnects the battery during electrical repairs or storage period. The driver also has manual control of the generator. When a voltage generator is out of adjustment the generator can be cut out until and during repairs. A signal light located above the handle on the dash will light when the ignition switch or any accessory has been left turned on, or when there is a short circuit in unprotected wiring. It will also give visible proof when short circuits are repaired—the light goes out.

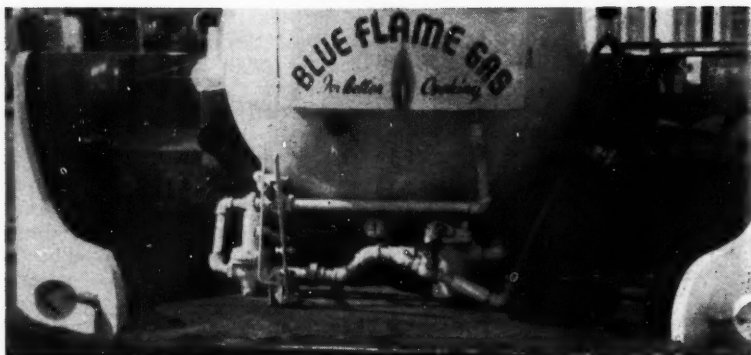
Relief Valves Added

To protect the pump, hose and piping, relief valves are added to relieve excessively high liquid pressures wherever there is a possibility of trapping liquid, or pumping against closed valves.

The rotary gauge, pressure gauge and thermometer permit safe and accurate determination of capacity and pressure to insure proper guides for filling during all climatic conditions.

In seeking the elimination of leaks in the piping a flexible, static ground hose is used to connect to the pump which may set up vibrations during filling operations. By adding the flexible hose, vibrations are limited to the pump and cannot be transmitted to the piping system.

With the use of a simple 3-way



Specialized tank truck equipped for "Sungas" fleet operation with explosion-proof hose reel and remote control of power take-off and clutch.

piping layout the truck pump can be used to pump in or out of the truck tank as well as from one outside storage to another. The great majority of the trucks built in the last few years have been equipped with Smith TC-2 pumps with a 2½" port which provides greater transfer capacity without greater speed, and the use of a standard power take-off. One of the best features of the pump, of course, is the self-adjusting packing which prevents leaks, reduces repairs and lessens fire hazards.

The truck is equipped with a very ample supply of storage space. The curbside of the truck has a double-door cabinet which contains the shutoff valves, filler valves, meter and printing register, thermometer and pressure gauge. In this spacious cabinet are also located the remote controls for the power take-off and clutch. This enables the truck operator to observe all

gauges and the meter, while controlling the pumping operations. The curbside walkway cabinet on top of the skirting contains the vapor hose, shutoff valve and a special 6" long vapor connection that permits safer fitting handling. On the opposite side of the truck the corresponding side cabinet and walkway cabinet are available for the storage of truck equipment, emergency reflector flares, and miscellaneous tools and fittings.

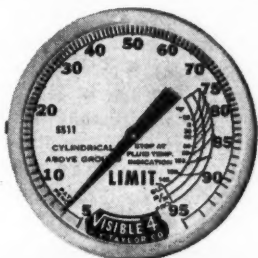
Hose Reel in Rear Cabinet

In the design of former trucks the liquid hose was kept in the walkway cabinet or coiled in the rear cabinet. This latest unit, however, was designed with a large rear cabinet to accommodate an explosion-proof hose reel carrying 100 feet of 1" hose. A special switch meeting the requirements of the National Electrical Code for Class

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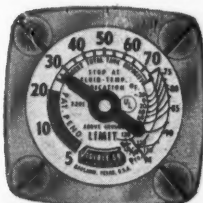
MASTER

10-inch dial face. For LP-Gas and Anhydrous Ammonia storage tanks.



JUNIOR*

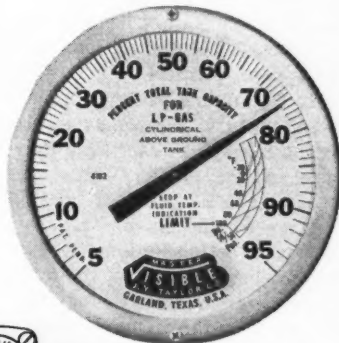
1 1/2-inch dial face



SENIOR*

2-inch dial face

* For above or below ground domestic systems and MOTOR FUEL TANKS. Top, side, end or angle mount.



SQUIBB



TAYLOR

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Memphis, Tennessee

1213 S. Akard Street
Dallas, Texas

1, Group D locations, controls the reel. By making available 100 feet of liquid and vapor hose the operator can select the safest location to park during filling of storage systems. Longer hose also eliminates possible pulling or stretching of hose which strains connections. The reel naturally is a time-saver and gives longer, stronger life to hose by cutting down on rough handling and wear.

Additional Safeguards Used

To protect against hose failures during unloading operations Bastian-Blessing Co.'s "Rego" excess flow check valves are installed so that they close when a predetermined safe maximum flow is exceeded. All openings and connections are also safeguarded against accidental discharge by use of "Rego" double check filler valves or vapor and excess flow valves. As an additional safety feature a Parkhill-Wade safety hose nozzle is used at the end of the liquid hose. This nozzle serves to lock connections securely before propane starts to flow into the tank. Further, should the hose rupture, or pressure in tank being filled be greater than the pressure in the delivery hose, a safety ball-check prevents back flow. After completion of the filling a lever action automatically bleeds trapped propane to the atmosphere through the end of the nozzle—at a safe distance from the operator's hands.

Upon completion of the unit a sturdy 6" channel rear bumper was added, the muffler was moved under the front bumper, and a dry chem-

ical fire extinguisher was mounted on each side of the tank. The tank was prime-coated, and then the entire tank and truck were finished in a heavy protective white enamel. After lettering with the standard SUNGAS trade-marks and design, the unit was marked with the necessary wording indicating contents and flammability as required by safety regulations.

In the Florida area, under the supervision of Henry Penchansky, headquartered in Miami, a fleet of tank truck units has been designed and planned, including special equipment for use in serving auto-trailer camps. Small units of 500-gallon capacity, specially equipped with a scale for filling 20-lb. capacity cylinders by weight with a short hose insure that the requirements of NBFU Pamphlet No. 58 will be met since the hose cannot be extended to fill cylinders installed on trailers. All of the features of remote control of clutch and power take-off, protective skirting and others incorporated in the larger 1200 and 1600 w.g. units are also standard on the smaller trucks.

In selecting equipment it is advisable to check for the approval of Underwriters' Laboratories as well as the standards and reputation of the manufacturer.

It is only with the best of equipment, best of personnel training, and the very best care and maintenance that our industry can hope to serve, most safely and competitively, a growing gas-demanding America.



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Flaming railroad right-of-way
to destroy weeds.

Burning Weeds Is Important Application

BUTANE and propane have gained an enviable position with industry in flame eradication and control of weeds along railroad and highway rights-of-way, water supply canals and in forest fire fighting.

For more than half a century railroads recognized the need for a weed control system that would be more efficient, cleaner and less hazardous to company and public property than oil burners or creosote application.

With widespread public acceptance of LP-Gas in the late 1930's Pacific Electric Co., of Los Angeles, launched a research program for development of a butane-fired flame weeder. In 1940 the first complete, full scale model was put into operation.

It incorporated the basic burner principle that was later adapted to farm flame cultivation but it operated under higher burner pressure and produced a more penetrating flame since crop protection was not necessary.

The weeder, later adopted with modifications by several railroads, was mounted on an electric system

passenger car and featured stationary burners at the rear which covered the general rail area. "All-position" booms were mounted on each side with a maximum extended span of 30 ft. The burner assemblies were hooded to concentrate flames and hot gases. Fuel was supplied from a 2000-gal. net capacity storage tank with a rated 150-lb. working pressure.

Spectacular Success

Pacific Electric officials were enthusiastic about the results they obtained. Butane had made a "gentleman's job" out of flame weeding, they said. Gone but not forgotten were the billowing clouds of oil smoke of which property owners had taken such a dim view.

The complete combustion of butane had eliminated the headaches produced by oil when unburned quantities ran down cracks in ties, ignited, and resisted water spraying. The fire hazard to buildings and fields adjacent to rights-of-way was also minimized. Fire extinguisher crews which followed flame weeders in a

HANDBOOK BUTANE-PROPANE GASES



- Up-to-date technical facts on LP-Gases.
- 352 Pages. Illustrated with Charts, Diagrams and Photographs.

Check this partial list of contents.

INTRODUCTION

The Progress of the Industry and the History of its Development.
The ABC of LP-Gas, an Introduction to LP-Gas Operations.

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Properties of Butane-Propane Mixtures
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Analytical Determination and Testing

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DISTRIBUTION OF LP-GAS

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Semi-Bulk Systems
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Multiple Utility Service from a Central Plant

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N.B.F.U. Pamphlet No. 58 (1947).
Motor Carrier Regulations
Freight Regulations
Unloading Tank Cars
Marine Regulations

APPENDIX

LP-Gas Insurance
Handy Tables for Field Use
The Interchangeability of Other Fuel Gases with Natural Gases
Flame Weeding
Bibliography
Glossary of Terms

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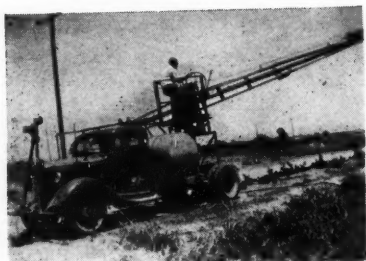
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BUTANE-PROPANE News

198 So. Alvarado Street
Los Angeles 4, California



Burning weeds with LP-Gas along an irrigation canal.

special water spraying car reported that after-burning had been reduced to a minimum and that it was comparatively easy to cope with.

After years of expensive and hazardous methods of weed control along the banks of irrigation canals in Arizona the Maricopa Reservoir and Power Co. called the Butane Corp., of Phoenix, for consultation on development of a practical LP-Gas fired flame weeding system.

Truck Developed

Net result was the design and construction of a truck that carried a 300-gal. butane tank and a highly maneuverable, counter-balanced boom with a high pressure burner assembly on its business end. The operator sits high on a seat at the axis of the boom, where he can better see and control all operations of the unit.

A comparison of earlier oil-burner performance figures with those of the LP-Gas design testifies to the latter's advantage. The oil unit required six men to cover an average of three miles per day—truck driver, relief driver, and a boom operator on the ground who needed several men to relieve him from the exhausting manual operation of the heavy burner unit, and a crew of three fire-control

men. When used in proximity to the water the burner left an undesirable film and otherwise constituted a tremendous fire hazard to farm land.

The highly mobile butane flame weeder requires but three men to cover six miles per day. One serves as driver, another as relief driver and fire control man, and the third as boom operator. No cleaning of burners is necessary and pressurizing equipment has been eliminated.

Fights Fires

Probably the most spectacular application of LP-Gas has been in forest fire fighting. Three years ago gas-fired pumps, compressors and rescue trucks earned gratitude and commendation during Maine's most destructive forest fire. The industry's "volunteer" equipment proved LP-Gas considerably safer, more portable and better adapted to backfiring than liquid fuel.

In 1945 the Los Angeles Department of County Forester and Fire Warden developed a mobile flame thrower, pressurized by LP-Gas.

A 90-lb. butane tank provided the pressure for a 35-gal. tank of diesel fuel. A 5-ft. hose directed the high-temperature flame of the original unit, although a longer hose was subsequently adopted. Since that time one-man bottled gas outfits have been designed that utilize a self-generating pressure unit for powerful burner operation. The system is considerably faster and more effective than back-burning by hand with liquid fuel.

Burning weeds along public highways and on farms are similar, popular applications.

Roy Woods Acquires Business In Wamego, Kan.

Roy Woods has purchased the Ekart Skelgas Service, Wamego, Kan., from Carl Ekart who has operated it for six years.

Name of the business is now the Wamego Skelgas and Electrical Appliance Co.

In order to launch his new business, Mr. Woods sent out a general invitation to everyone to attend Skelgas Day celebration at his store, Oct. 27. A large number of persons visited the establishment on that day. There were free refreshments, souvenirs and door prizes. The event was from 1 p.m. to 10 p.m.

F. E. Harvick Is Director of Texas LPG Division

Frank E. Harvick, long identified with the Texas Railroad Commission, has been named director of the Liquefied Petroleum Gas Division, recently created by legislative action.

Staff of the new division will in all probability be composed of five inspectors who will be put through an intensified training course which will consist of visiting and studying every type installation, including refineries, wholesale dealer plants, retail dealer outlets, home installations, etc.

Mr. Harvick has served as a petroleum analyst and in the engineering department of the Oil & Gas Div. of the railroad commission.

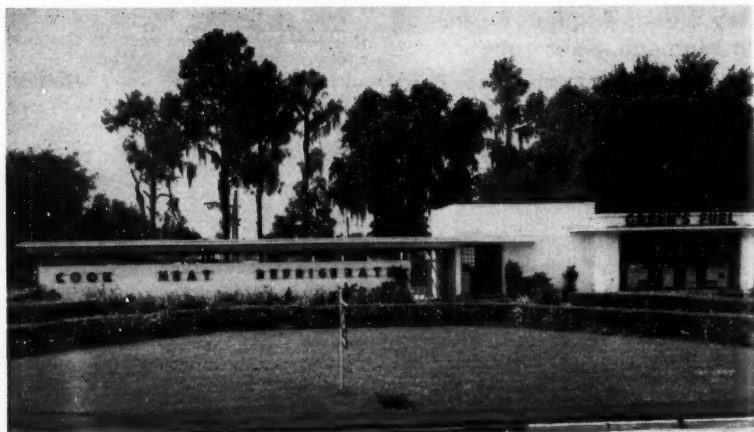
New Building Houses Green's Fuel of Orlando

As the culmination of 11 years successful operation, Green's Fuel Gas Service, Orlando, Fla., opened new showroom and headquarters in November. The company, headed by E. Reed Whittle, serves more than 20,000 residents in Orlando and the surrounding area.

Friends and customers of the company were invited to open house at the new N. Mills St. building which houses a showroom, executive offices,



This imposing line-up of transports and delivery trucks of Green's Fuel of Florida, Inc., Lakeland, Fla., serves company branches and customers in Winter Haven, Lake Wales, Plant City, Bartow, and Dade City. Note carburetion equipment on transport in foreground.



The Plant City, Fla., branch store of Green's Fuel of Florida, Inc., is located on one of the largest traffic highways in Florida connecting Tampa and Daytona Beach. The property, extending back to the Atlantic Coast Line tracks, houses three large bulk tanks and a bottle filling plant.

sales and service departments, and warehouse area. In the showroom, where a complete selection of appliances is on display, one section is a complete kitchen for actual demonstrations. The entire building is air conditioned by a Servel gas-operated unit.

Green's Fuel Gas Service operates a fleet of 22 trucks ranging from 1500-gal. delivery trucks to 5000-gal. dual tank transports. A two-way radio communication system simplifies emergency fuel delivery and service calls.

Other officers of the Orlando firm are William R. Conway, vice president and general manager; Mrs. Helen F. Richter, secretary-treasurer; Rolland F. Holloway, vice president; J. B. McDonald, sales manager; John Getzen, head of engineering; Don Anderson, head of the service department; and J. Wesley Fly, comptroller.

LPG Carburetion Text Book Published in Tulsa, Okla.

Recognizing the rapid growth of liquefied petroleum gas as an engine fuel, T. E. Wisby director of training of the National L-P Gas Institute, Tulsa, has recently completed a manual covering all types of butane-propane carburetion installations and conversions. This manual, "HOW TO CONVERT TO LP-GAS CARBURETION," is published by the Ross-Martin Co., Tulsa, Okla., at the price of \$10.

Designed for use by implement manufacturers, tractor and implement dealers, LPG distributors and dealers interested in the problems of converting automotive and stationary engines, the manual is the result of a year's work in compiling data. In preparing the manual the author has relied not only on his almost 25 years'



The display room of Irvington Gas Co., Irvington, Ky.

experience with aircraft, automotive and stationary power plants, but has had the help of leading manufacturers of carburetion and accessory equipment.

The manual, adopted as a text by the National L-P Gas Institute, is illustrated step-by-step with more than 250 pictures, graphs, diagrams and tables, and is written in concise, easy-to-read language.

Traces Development Of Modern Gas Engine

"The Modern Gas Engine," a paper presented at the Oil and Gas Power Conference of the ASME is now available in bound form. Written by Ralph L. Boyer and W. R. Crooks of the Cooper-Bessemer Corp., the paper provides data, photographs and charts on the development of the large internal combustion engines used for pipe line transmission service and electric power generation. It discusses also the installation and operating economies of different types of design on their various services.

Bound copies are available by writing The Cooper-Bessemer Corp., Mount Vernon, Ohio.

Gas Dealer Capitalizes Upon Christmas Season

Capitalizing upon the holiday season, without commercializing it, the Irvington Gas Co., Irvington, Ky., mailed its customers a greeting card which showed a picture of its retail salesroom on one side (see cut) and the following verse on the reverse side:

Season's Greetings

To thank you, as we'd like to do,
Is far beyond our powers;
For if we had no friends like you
There'd be no firm like ours.

Plant Built by Koppers To Augment Gas Supply

A gas plant that can make city gas ranging in heat content from 300 Btu to 1050 Btu, using propane, butane, gasoline, light oil, or natural gas as raw materials, has been put in operation by Koppers Co. at Rochester, N. Y.

The plant is designed to produce more than a million cubic feet of city gas per day. Koppers claims the

plant is the first low-cost unit "for either the reforming of natural gas or the making of a gas which can augment natural gas at periods of peak demand."

The new unit was built for the Rochester Gas & Electric Corp.



LEE BRAND

L. Brand Re-Elected Chairman Of Nat'l Promotion Committee

Lee A. Brand, vice president, Empire Stove Co., Belleville, Ill., was re-elected chairman of the National Committee for LP-Gas Promotion at a meeting in St. Louis Dec. 5. Originally named to the post Feb. 9, 1950, to succeed the late John C. Pankow of the Detroit-Michigan Stove Co., the group's first chairman, he was re-elected last year.

At the same session, Ernest Fannin, president, Fannin's Gas and Equipment Co., Phoenix, Ariz., was named vice chairman and Robert E. Borden, director, LP-Gas Information Service, Chicago, was re-elected secretary.

Florida's West Coast Has New Fuel Distributor

The Southern Gas & Fuel Co. has opened a new 30,000-gal. bulk plant and office in Plant City, Fla., for the distribution of propane on the West coast of Florida.

Southern Gas & Fuel will have sales offices at 114 N. Collins St. in the remodeled second floor of the Benford Bldg. Planning wholesale distribution only, the company will serve dealers within a 75-mile radius of Plant City.

According to Jerry O'Brien, owner of the company, the bulk plant has been erected on Seaboard Air Line Railroad property near Knights Station, an ideal location from the standpoint of rail and truck transportation.

Anti-Leak Booklet

A new 24-page booklet describing the properties and advantages of "Carboseal" brand anti-leak for stopping leakage in bell-and-spigot joints of gas mains is being distributed by Carbide & Carbon Chemicals Co.

The liquid saturates dried-out packing and swells the jute and hemp fibers as much as 44%, which, according to the booklet, gives as high as 100% reduction in leakage, eliminates a hazardous condition, checks vegetation damage, reduces maintenance costs, wets down rust and dirt in the mains, and keeps gas systems tight for years without retreatment.

Copies of the booklet may be obtained from the company at 30 E. 42nd St., New York 17.

Heat-Treating Review

The fourth issue of the "Heat Treat Review" published by Surface Combustion Corp. is available from the company at Toledo 1, Ohio.

This issue features articles on batch furnaces for continuous production and protective atmospheres for annealing non-ferrous wire.

The publication, comprehensive and well-illustrated, should be of wide interest to all persons concerned with heat-treating processes.

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P-34

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Associations

American Gas Assn.

Newly elected president of the American Gas Assn. is George F. Mitchell, president of the Peoples Gas Light & Coke Co., Chicago.

Mr. Mitchell succeeds D. A. Hulcy, president of Lone Star Gas Co., Dallas.

Institute of Cooking & Heating

Re-elected to serve another term as president of the Institute of Cooking & Heating Appliance Manufacturers is Walter F. Muhlbach, who was chosen at the organization's semi-annual meeting in Cincinnati.

Mr. Muhlbach is director of distribution and research of the Florence Stove Co.

LPGA Board

A special committee, headed by Walter Hoagland, was appointed at the December LPGA directors meeting in St. Louis to study recommendations that the association (1) provide more information to law-enforcing authorities and the public on the safe handling of LPG through increased staff activities; (2) sponsor field engineering service on gases, this at the request of the National Fire Protection Assn.; and (3) initiate a research project on the odorization of LP gas.

Due to the efficient presiding of President W. S. Lander, directors were able to complete their business in one day, although the meeting had been previously scheduled as a two-



W. S. LANDER



WALTER HOAGLAND

day affair. Discussion centered about expanding the industry's safety and education programs.

Chairman Fred A. Rives, of the education committee, proposed that two management courses be scheduled for 1952 and approval was given. A favorable vote was given on a recommendation of the committee on marketing research, headed by A. F. Smith, that a survey be taken of LPG tank production in order to gather badly needed statistics.

New district chairman appointed at the meeting include Si G. Darling, Pratt, Kan., District 5; Frank T. Carpenter, Minneapolis, District 4; and Garza Osuna, Mexico City, District 13.

New directors include J. L. Fietz, Lexington, Mass., District 10 (new district); E. W. Sanderson, Thornhill, Ontario, Can., Eastern Canadian District (succeeding Walter Walsh); H. H. Dauphinee, West Warwick, R.

I., state director for Rhode Island, succeeding F. J. Armbrust; and Thomas W. Quail, Milwaukee, director for Wisconsin, succeeding Harris Helmer.

C. J. McAllister, who was recently appointed chairman of the newly created Gas Fuel Technology Foundation Committee, reported that his group has made plans for an intensive drive for funds to provide scholarships at the Southern Technical Institute and that already several contributions have been received from industry companies.

Montana

The 1951 annual meeting of the Montana Liquefied Petroleum Gas Assn. was held at Butte Nov. 19-20. Over 60 representatives of Montana dealers, national manufacturers, and oil companies were registered.

On the opening day of the convention an open forum was conducted on "Carburetion Problems," followed by a "Canadian Hour" honoring Montana's northern neighbors. At the banquet that evening, the main speaker was R. H. Mahnke representing the Liquefied Petroleum Gas Assn., who spoke on "The Benefits of Organization."

On the second day of the convention, M. E. Ennis of Chicago, representing the National Committee for LP-Gas Promotion, presented "Facts About LP-Gas Storage." During the noon luncheon, that day, an explanation of "Regulations Relating to LP-Gas" was given by a representative of the Montana Industrial Accident Board. Election of officers was held during the afternoon at the annual business meeting and the following were named unanimously:



New officers of the Montana L. P. Gas Assn. (seated) Fred Jones, president; Ray Johnson, vice president; Norman C. Johns, secretary-treasurer; (standing) George Steele and D. O. Mecklenburg, directors.

President—Fred Jones, Union Natural Gas Co., Great Falls.

Vice president—Ray Johnson, Glacier Distributors, Cut Bank.

Secretary-treasurer — Norman C. Johns, Geo. Steele & Co., Great Falls.

Directors—D. O. Mecklenburg, Montana Butane Gas Co., Billings, and George Steele, Geo. Steele & Co., Butte.

It was voted to hold the 1952 annual meeting on April 7-8 at Great Falls. It was also decided to affiliate with the national LPGA.

North Dakota

At the second annual convention of the North Dakota L. P. Gas Assn. in November, Ross Opie, of Northern Gas & Appliance Co., Fargo, was elected president, succeeding Addison Hedberg.

Dywayne Busch, Jamestown Bottle Gas Co., Jamestown, was elected secretary-treasurer and Art Morken, Farmers Union Central Exchange, Williston, is a new director.

According to A. T. Olson, last year's secretary-treasurer, more than 118 men attended the Nov. 12-13 meeting in Bismarck, many of whom came from South Dakota, Montana, and Minnesota.

The program, well-received by those in attendance, contained talks by W. C. Little, Fire Protection, Inc., on "Fire Protection"; J. C. Nelson, Pure Oil Co., spoke on "L. P. Gas Marketing and Supply"; C. F. Butterworth, Magic Gas Co., "L. P. Gas Carburetion"; H. A. Goodwin, Bastian-Blessing Co., "Protect Yourself"; Arthur C. Kreutzer, LPGA, "Legislation for L. P. Gas"; Fred L. Bjornson, "Insurance for the Industry"; Russ Gasal, Butler Manufacturing Co., "The Philosophy and Psychology of Selling"; Ed Casper, Bemidji Bottle Gas Co., "L. P. Gas Hazards."

Southeastern District, LPGA

Prominent industry speakers will be featured on the program of the annual convention and trade show of the LPGA's Southeastern district on March 24-26 at the George Washington hotel, Jacksonville, Fla., according to T. G. Fields, district secretary.

Tentatively scheduled are Mark Anton, Suburban Propane Gas Corp., an official of PAD, Howard D. White, Elmer Wheeler, and LPGA President W. S. Lander.

Annual meetings of state groups of North Carolina, South Carolina, Alabama, and Georgia will take place during the meeting.

Utah

President L. M. Haines presided at the Dec. 7 meeting of the Utah L. P. Gas Assn. in Salt Lake City. The main subject under discussion was proposed legislative plans and Bob Lang presented a report of the progress made by the legislative-safety committee.

An early spring meeting is planned by Utah dealers which will be devoted to the sale and servicing of LPG carburetion equipment.

Western States

All members of the industry are invited to attend the L. P. gas section farm machinery conference of the University of California, at Davis, Calif. on Feb. 1-2. Under the direction of Lloyd Lamoria, of California's division of agricultural engineering, the conference will be devoted for most part to LPG carburetion.

Of interest to dealers in Nevada will be the semi-annual meeting of the Nevada Liquefied Petroleum Gas Assn. scheduled for Feb. 17 at the El Cortez hotel in Reno.



URNS DRINKING WATER INTO *Profits*

Records show faster, more economical beef gains, more milk production when winter drinking water is held at 48° F. Stock drink more water, eat less feed . . . produce more milk, more beef, earn greater profits.

Dairymen and cattlemen say the Johnson LP-Gas Automatic Stock Tank Heater pays for itself in one season and its dependable automatic operation means less work in caring for their herds. Look ahead with Johnson. Write for profit-making facts. Get complete details now.

THESE FEATURES MEAN MORE Profits FOR YOU

- Increased gas load. Average 600 lbs. per year per customer.
- Satisfied customers. Increased goodwill.
- Designed for the job. No condensate problem.
- Automatically maintains 48° water temperature in coldest weather.
- Stays lit.
- Easy installation in wood or steel tanks.
- Recommended by leading distributors and merchandisers of bottled gas.

Manual type model also available.

JOHNSON GAS APPLIANCE CO.

597 E AVENUE N.W.

CEDAR RAPIDS, IOWA

FIFTY YEARS OF QUALITY MANUFACTURE OF GAS BURNING EQUIPMENT

Wyoming

Barney Decora was elected president of the Wyoming dealers at the group's meeting on Dec. 7-8 in Casper. Mr. Decora, of the Sweetwater Gas & Equipment Co., headquarters in Rock Springs, Wyo.

Other officers include C. A. Brown, Pure Gas Service Co., Riverton, and T. C. Wassenberg, Wassenberg Gas & Appliance Co., Gillette, first and second vice presidents, respectively; Jack White, White's Sales & Service, Wheatland, secretary; and George Howarth, Howarth & Son, Buffalo, treasurer. The latter two were re-elected to their offices.

One of the main topics discussed at the meeting, attended by dealers from many states, was the coming legislative year. The 1952 meeting of Wyoming LP gas dealers will be held in Casper on June 23-24.

Wisconsin

John McCormick, of Midwest Bottled Gas Co., La Crosse, Wis., was recently elected president of the Wisconsin Liquefied Petroleum Gas Assn.

Other new officers include William Brenckle, Rapid Thermogas Co., Waukesha, vice president, and "Doc" Runde, Metro Gas Co., Sparta, secretary-treasurer.

Replacement Market Is Big

The sale of 3,500,000 refrigerators in 1951 means that 90% of the nation's homes will have automatic refrigeration, said W. Paul Jones, president of Servel, Inc. recently. "This focuses the industry's attention upon finding the best possible means of developing the replacement market." He is advocating a sales program with the theme of "making the two-refrigerator household as familiar

as the two-car garage, or more so.

"The second refrigerator would, of course, be greatly different in design, shape and size from the standard kitchen type model," he said. "It would make special provision for the many items which are not actually table foods but which nevertheless must be kept in a refrigerator. It is these non-table items which do much toward 'crowding' a kitchen refrigerator."

He estimated there are at least 10,000,000 refrigerators in use today which are more than 14 years old. "These models, while they may be adequate mechanically, are far from adequate to cope with the ever-increasing need for food storage space, and offer a virtually untapped sales field exists in the millions of families who own an older model."

Southern California Dealers Learn About CMP Ratings

Seventy-five southern California dealers and equipment manufacturers, from points up to 125 miles away, met in Pomona, Calif., Nov. 27 to hear N.P.A. analyst Frank Bursik explain the present regulations on priorities and allotments covering the procuring of items containing critical war materials such as copper, lead, and tin.

After Mr. Bursik's explanation of the general procedures for obtaining CMP ratings on their orders, the meeting was opened for questions relating to specific phases of the problem, each special section being under the guidance of a representative of that branch of the industry.

Rudy Munser, Andrews Butane Co., Long Beach, headed the dealer's section, while the manufacturer's discussions came under the guidance of the following leaders: Torches, furnaces, hand tools, etc., Jack Griffith,

THIS

Invader **PUMP**

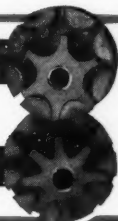


**NEEDS NO
LUBRICATION**

- Graphite bearings and specially treated shaft assure long, trouble-free service without lubrication.
- Not a re-worked standard gasoline pump, but a rugged duty rotary pump specially designed to handle LP-Gas.
- For truck mounting (as illustrated) or with motor drive.
- Joints cannot leak. "O" rings (used in place of gaskets) permit a tight metal-to-metal fit.
- Remarkably compact . . . light weight . . . long wearing.
- Best of all, INVADER costs less per gallon pumped.

Here's the reason why INVADER Pumps perform better . . . longer. The new and improved tooth design provides a *positive seal and rolling contact* . . . assures you of service you could never get with the old-style construction. Less "down" time, fewer replacements, and reduced power costs!

**"INVADER"
CONSTRUCTION**



**OLD STYLE
CONSTRUCTION**

Invader
PUMPS

ASK YOUR SUPPLY HOUSE, OR WRITE
FOR FULL INFORMATION AND PRICES

The SCHIRMER-DORNBIRER PUMP Co.

1719 EAST 39th STREET • CLEVELAND 14, OHIO

! Mutual Liquid Gas Co.; tank fittings and copper tubing, Ralph Meeder, Selwyn-Landers Co.; steel tanks and containers, Herb Buehler, Buehler Tank and Welding Works; carburetion equipment, Ronald Usher, American Liquid Gas Corp., material allocation, W. Hagny, American Liquid Gas Corp.

The meeting was held at 7:30 in the Southern Counties Gas Co. auditorium, preceded by dinner and a social hour. Ben Marsh, West Coast secretary of the LPGA, and interested members of the association, planned and arranged the meeting for the benefit of all elements of the industry.

John Kelderhouse Appointed Secretary New LPGA District

John E. Kelderhouse has been appointed district secretary for the newly created North Central District

of the Liquefied Petroleum Gas Assn., Howard D. White, executive vice president, has announced. His headquarters will be in Chicago.

Mr. Kelderhouse studied engineering at Ferris Institute, Grand Rapids, Mich., and entered the employ of

the Public Service Co. of Northern Illinois in 1937 as a gas heating salesman. After 10 years with the utility, he became a salesman for the Monroe Stove Co., Chicago, and following that concern's consolidation with the Dearborn Stove Co. in 1948, was promoted to divisional sales manager. During the past year he has operated his own business as a representative



JOHN KELDERHOUSE

for manufacturers of gas heating and cooking equipment.

The LPGA now has six district offices. Others are located in San Francisco, Denver, Wichita, Kan., Atlanta, Ga., and Boston. The new North Central District will serve the states of Minnesota, Wisconsin, Illinois, Michigan and Iowa.

O. L. Garretson Organizes New Distribution Company

O. L. Garretson, president, has announced the opening of Garretson Carburetion of Texas, Inc., in Lubbock, Texas. A complete shop and office building has been erected at 1202 Erskine Road for distribution of Garretson systems in Texas and New Mexico. Overnight delivery service is given from this plant that houses a stock of carburetion equipment.

John R. Alexander, executive vice president and general manager of the firm, states that an intensive service training program will be instituted at an early date. Dealers and their service personnel will be invited to the plant to thoroughly acquaint them with the proper operation of the Garretson system. The service school and field supervision will be under the direction of A. J. Turner, chief engineer, long associated with Mr. Garretson.

Distribution and sales will be handled by Al Costanzo, secretary-treasurer and sales manager of the firm. Distribution will be handled through licensed dealers exclusively. The complete carburetion line includes vapor or liquid withdrawal systems for tractors, stationary engines, cars and trucks. Mounting brackets are available for as many as five locations on some tractors.

Glen Story, of Littlefield, and Harold Cochran, of Dallas, are the two regional field representatives.

Texas Natural Will Double LPG Production

Texas Natural Gasoline Corp., with offices in Dallas, Texas, and Tulsa, is celebrating its third anniversary of operations as a manufacturer and marketer of natural gasoline and its by-products.

The company was organized in 1948 with a staff of only 4 employees and now has a personnel of approximately 200. Texas Natural operates four natural gasoline plants and owns an interest in a fifth plant, all being in Texas. The present annual production of Texas Natural Gasoline Corp. and its affiliated companies is 83 million gallons. The company is now in the midst of an expansion program which is expected to increase its production approximately 79 million gallons, or a total production per year of 162 million gallons.

The corporation's principal offices are located in the Wright Bldg., Tulsa. Its officers are: John T. Oxley, president; John D. Curtin, Jake L. Hamon and Edwin L. Cox, vice presidents; Claig H. Perry, secretary; and Leon McVay, general superintendent.

Denver to be Site of March 17-19 Service School

Dates for the 1952 service school in the Mountain States district, LPGA, are March 17-19. The school will be held at the downtown campus of the University of Denver, Denver, Colo.

Following a meeting of the service school committee of the district, plans are being made to conduct the school on a "see and do" basis, which provides for each student to repair, disassemble, reassemble and adjust controls, regulators and other equipment in constant use in the LP gas industry.

CALENDAR

- Jan. 21-22—Compressed Gas Assn. 39th Annual Meeting. Waldorf-Astoria, New York.
- Jan. 22—New York State L. P. Gas Assn. DeWitt Clinton Hotel, Albany.
- Jan. 28-29—Michigan Liquefied Petroleum Gas Assn. Winter Convention. Rowe Hotel, Grand Rapids.
- Feb. 1-2—Liquefied Petroleum Gas Section Farm Machinery Conference. University of California, Davis, Calif.
- Feb. 17—Nevada Liquefied Petroleum Gas Assn. Semi-Annual Meeting. El Cortez Hotel, Reno.
- Feb. 25-26—Indiana LP-Gas Assn. Hotel Claypool. Indianapolis.
- Feb. 25-26—LPGA Board of Directors. Del Prado Hotel. Mexico City, Mexico.
- March 17-19—Mountain States District Service School. University of Denver, Denver.
- March 20-21—LPGA Eastern Canadian District Annual Convention. Windsor Hotel, Montreal, Quebec.
- Mar. 24-26—LPGA Southeastern District Convention. George Washington Hotel. Jacksonville, Fla.
- March 24-26—University of Minnesota LP-Gas Service School. St. Paul.
- April 7-9—Missouri L. P. Gas Assn. Annual Convention & Trade Exhibit. Hotel President, Kansas City.
- April 9-11—Midwest LP-Gas Service School. Iowa State College, Ames.
- April 13-15—Mississippi LP-Gas Assn. Annual Convention. Edgewater Gulf Hotel. Edgewater Park.
- May 12-15—American Petroleum Institute, Division of Refining. Mid-Year Meeting. St. Francis Hotel. San Francisco.
- May 12-14—LPGA Annual Convention & Trade Show. Palmer House. Chicago.
- May 21-23—Gas Appliance Manufacturers Assn. Annual Meeting. The Broadmoor. Colorado Springs, Colo.
- June 18-20—Texas Butane Dealers Assn. Baker & Adolphus Hotels. Dallas.
- June 23-24—Wyoming L. P. Gas Assn. Casper.

Products...

Rotary Pump

SCHIRMER-DORNBIRER PUMP CO.
1719 E. 39th St., Cleveland, Ohio

Model: Invader.

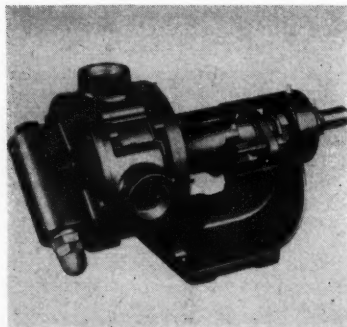
Application: For truck mounting or with motor drive.

Description: A safety valve is incorporated as an integral part of the head. It is reversible for changing direction of rotation. "O" rings are used permitting tight, metal-to-metal fit.

The specially treated shafts and bearings require no lubrication. Sealed radial thrust bearing keeps out water and dirt, eliminates end thrust. Packing chamber is extra long, providing extra packing which prevents leaks.

The new and improved tooth design in the Invader rotary pump assures a positive seal and roll contact.

The manufacturer claims less "down" time, fewer replacements, and reduced power costs with this pump. A new, simple rotor adjustment is also featured.



LPG Filling Station

NORTH TEXAS TANK CO.
P.O. Box 519, Denton, Texas.

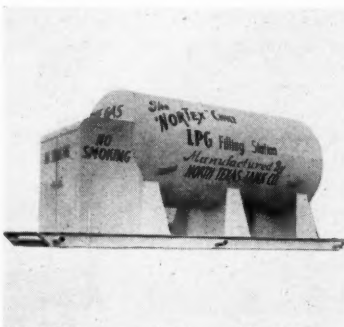
Model: Nortex Chief.

Application: The unit has been designed to meet the needs of the expanding L. P. gas industry.

It is particularly adaptable to use on farms where the fuel is used for many purposes, especially for refilling of tractors and other automotive equipment where permanent bulk plants have not been installed and where portability is desired.

Description: To meet existing safety regulations, the station has a water gallon capacity of 1199 gals. It is skidded and complete with all necessary equipment compactly enclosed in a rugged, double-door locking cabinet.

The filling station incorporates the following dispensing equipment: No. 433 Neptune Print-O-Meter; 2 hp., single phase, 220V motor, and a No. MC-1044H Smith explosion-proof motor.



PRODUCTS

Wall Heater

CHATTANOOGA IMPLEMENT & MANUFACTURING CO.
Chattanooga 6, Tenn.

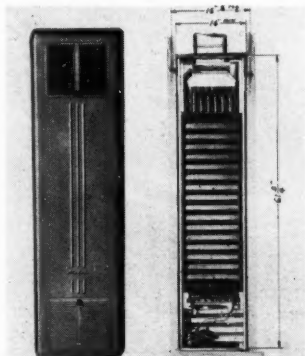
Model: Royal.

Description: Available as single units (25,000 Btu) or double (50,000 Btu with heat outlets for two rooms on opposite sides of wall), these new heaters are fully vented. Designed to fit between studs on 16-in. centers, the entire unit installs above floor level to give plenty of cleaning room.

The one-piece Royal cast iron burner with drilled, raised ports is featured in the AGA-approved line. The entire burner and control assembly is easily removed.

The heaters are available with various accessories including adaptation for use with General Controls or Robertshaw thermostatic controls, with plain wall or timer wall thermostat.

All L.P. gas units have 100% safety shutoffs. The flue may be adapted to 4-in. oval pipe.



Conversion Burner

BRYANT INDUSTRIAL DIV.
17825 St. Clair, Cleveland, Ohio

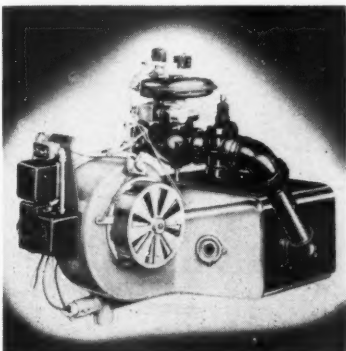
Model: No. 214 Forced Draft.

Application: The burner is shipped factory wired and assembled as a unit for ash-pit installation in furnaces or boilers in large residences, industrial or commercial buildings.

Description: Produced in 11 capacities ranging from 400,000 to 20,000,000 Btu/hr. input, the No. 214 features the following standard equipment: automatic electric ignition and electronic flame failure protection; "on-off" or "throttling-off" type diaphragm valves; constant air-to-gas ratio shutter; ceramic burner face; and centrifugal blower fan.

Electric spark ignition and completely automatic pilot operation are also featured. The pilot, ignition electrode, and electronic flame electrode are mounted in fixed positions.

The pilot burner functions as an atmospheric and a blast type unit and has provision for primary air adjustment.



PRODUCTS

Water Heater

SOUTHERN HEATER CO.
844 Baronne St., New Orleans.

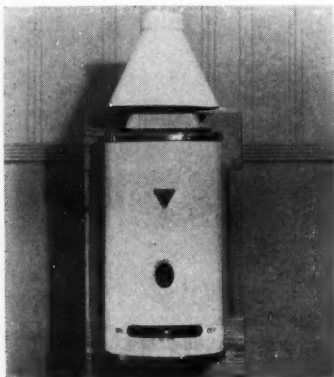
Model: Southland Ascot.

Application: For apartments, small homes, boarding houses, garages, churches, tourist camps, etc.

Description: Mounted on the wall, this automatic coil heater supplies an instantaneous and continuous flow of hot water, operating only when faucet is open. Water is heated as it passes through the Ascot. No storage tank is needed.

Features include finned-type copper heat exchangers with pre-heat coil-cooled section to eliminate condensation; heavy brass water motor and gas valve; stainless steel moving parts; multiple port burners; Baso safety pilot; external temperature control knob.

AGA-approved, the Southland Ascot has an output with a 60° rise of 1.97 gals. per minute, 118 gals. per hour. With 100° rise, the output is 1.18 gals./min., 70 gals./hr.



Broiler-Grill

MAGIKITCH'N EQUIPMENT CORP.
Quakertown, Pa.

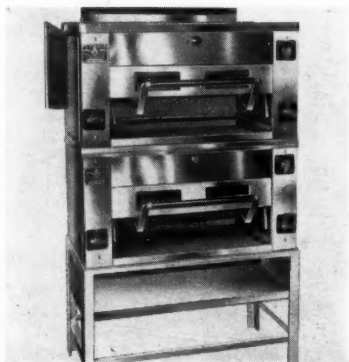
Model: MK 3-4 Double Decker Char-Broiler and Grill.

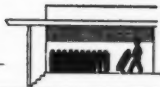
Application: Commercial cooking installations.

Description: According to the manufacturer, the unit does not require the use of cooking oils nor turning of food. With the two-deck feature, capacity of former models is doubled for short-order work.

The griddles pull out for easy loading and are adjustable from 2½ in. to 5½ in. to accommodate various thicknesses of meat, chicken, seafood, or sandwiches.

Griddles are of heavy polished cast iron, with a stainless and chrome steel exterior. The divided burners are separately controlled. Automatic pilot lights are provided. A full-size combination crumb tray and grease pan is provided for each inside broiler-griddle. An oversize grease tank is provided for the top griddle.



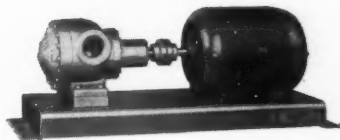


FAREWELL TO FIXITS!

No more high labor expense for constant lubrication and tinkering with packing boxes. Smith Pumps have self-adjusting packing and are self-adjusting to wear. Their long trouble-free operation at peak efficiency saves you money through faster delivery, lower labor cost, reduced product loss, and freedom from costly shutdowns and service expense.

Among the 14 models for all types of truck or bulk plant service is the pump best suited to your requirements.

To help you make a good pump installation, we offer you assistance—in the form of reprints of articles on pump installation and literature describing the most efficient operating ranges of the various Smith Pump sizes.



SMITH

PRECISION PRODUCTS COMPANY

1135 MISSION STREET • SOUTH PASADENA, CALIFORNIA

JANUARY — 1952

121

PRODUCTS

Primer, Accelerator

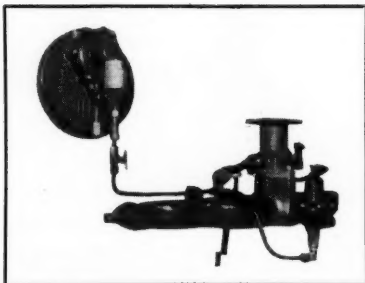
W. W. DICK CO.
Box 4103, Shreveport, La.

Model: Dico Sure-Start Primer and Accelerating System.

Application: Designed primarily for use on Ensign equipment, the unit is adaptable to several other makes of carburetion.

Description: A conventional solenoid valve is installed in the primary regulator test opening. The solenoid is actuated either by a push-button on the vehicle dash or by an electric switch connected to the throttle rod. The switch is adjustable so that it actuates the solenoid valve at any predetermined throttle opening which, in turn, supplies the accelerating regulator with gas vapor to be discharged into the manifold at the critical moment of vacuum fall.

The flow of gas is metered through



an adjustable needle valve. The valve of the back-seating type regulator is held closed by the manifold vacuum until the accelerator is depressed suddenly at which time the vacuum falls and a weak spring on the upper side of the diaphragm causes the regulator to open, admitting a small charge of vapor like the accelerating pump function in the gasoline carburetor.

Manometer

F. W. DWYER MFG. CO.
317 S. Western Ave., Chicago

Description: This field manometer has been developed by a manufacturer of pressure and analyzing instruments. Made of durable vinyl-plastic, this flexible manometer can be rolled, twisted, or bent into any shape, after which it will return to a full length, easily read, and accurate "U" tube.

The plastic scale is firmly held between the tubes and is adjustable.



Brilliant Fine **CIRCULATORS** ▼ FOR ALL GASES ▼



LOWBOY console type. Sizes from 20,000 to 65,000 Btu. Ideal Heatmaker for home, store, office, lodgehall. A quality Circulator but budget-priced.



3-WAY Circulator with Pyrex glass front. Radiant heat to floor and circulated heat to living zone. 35,000 and 50,000 Btu sizes.

FULLY ENCLOSED. FULLY VENTED. BUILT-IN DRAFT DIVERTER AND FIXED PILOT. 100% WELDED FROM BURNER TO FLUE. AUTO-CONTROLS OPTIONAL.



WINTER Air Conditioner in 3 sizes to 75,000 Btu. Heats, circulates, filters, humidifies. Gentle fan-forced delivery heats from the floor up.

WRITE FOR CATALOG



PRODUCTS

Unit Heater

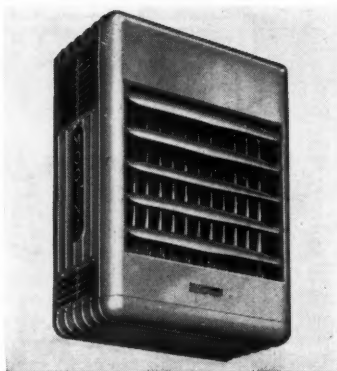
MODINE MANUFACTURING CO.
Racine, Wis.

Model: 105.

Description: Heat exchanger and burners are stainless steel for maximum resistance to rust and acid action of corrosive gases. Heat exchanger tubes are die-formed to provide their own combustion chambers.

The use of stainless steel is said to reduce warm-up period in tube. Modine heaters utilize elongated burner ports, minimizing clogging and maintenance.

Model 105 has an input rating of 105,000 Btu per hour. The unit weighs 106 lbs., is 30 in. high, 21¾ in. wide, and 12½ in. deep.



All models are equipped with built-in draft diverters, automatic

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My connection with the LP-Gas Industry is _____



PUT IDLE STEEL TO WORK



...to make NEW steel

Steel mills use *one* ton of iron and steel scrap in making every *two* tons of open-hearth steel.

But normal sources of iron and steel scrap can't keep up with demand. That's why the steel industry asks you to collect your scrap—in the form of obsolete, worn-out machinery and parts—and send it back to the mill.

Only with *your* help can current military and civilian production demands be met.

Start *your* scrap salvage program today—call in your local scrap dealer *now*.

NON-FERROUS SCRAP IS NEEDED, TOO!

BUTANE-PROPANE News

198 So. Alvarado St., Los Angeles 4, Calif.



PRODUCTS

safety controls, rust-protected casings, and built-in fan guards.

The heaters are AGA-approved and are available in sizes ranging from 65,000 to 165,000 Btu.

Quick access to burner, manifold, and pilot light is by means of hinged casing bottom which may be dropped by removing two wing-screws.

Pump Bulletin

The D. H. Krug Co., manufacturers of Krug pumps for L.P. gas and anhydrous ammonia, has published a booklet telling the history of the company and describing its product.

According to the information presented, the majority of UL-approved Krug hand pumps are installed on farms for filling tractors and truck tanks.

Copies of this interesting story of Krug pumps may be had from the company at Madison, S. D.

"Baso" Service Manual

Servicing of "Baso" automatic safety pilots is described in a new 100-page service manual issued by Milwaukee Gas Specialty Co. designed to familiarize servicemen with the proper checking of valve performance as related to the many service problems encountered in the field.

The book is divided into sections covering Theory of Operation, Description of Baso Safety Pilots, Disassembly and Repair Procedures, Service Suggestions, and Parts Catalog. The company has prepared the manual to point out to servicemen the varying conditions influencing gas appliance installations and how these conditions can affect Baso valve and pilot operation and what corrective steps should be taken.

Anyone engaged in gas appliance servicing can obtain a copy of the manual by addressing his request to the Milwaukee Gas Specialty Co., Milwaukee 2, Wis.

Furnace Warm Air Regulator

The problem of cold floors has been licked to the satisfaction of Perfection Stove Co.'s engineering research department in a new, simple device which graduates the circulation of warm air according to the amount of heat in the furnace bonnet, resulting in a smooth, even distribution of warm air throughout the dwelling.

When the reservoir of heat in the bonnet reaches a pre-determined setting, a single-speed blower comes on. The control mechanism, regulated by a thermacoil arrangement, opens gradually, delivering just the right amount of air in coordination with the amount of heat in the bonnet.

Wide open for full flow at peak output, the vane reduces this air volume as the bonnet heat is reduced, but only shuts off the blower when all the warm air has been drawn from the bonnet.

This new mechanism makes it possible to obtain from a single-speed blower an evenly graduated flow of warm air. Also, it makes possible a gradual, heat-building distribution of warm air.

Because it positively controls the air flow, this new heating device is said to eliminate floor-to-ceiling temperature variations.

Regulation of the flow of warm air is accomplished with a simple, sturdy control with but a single moving part, built into the forced air furnace at the factory. No adjustments are necessary following installation.

Butane-Propane

POWER SECTION

Installations

CARBURETION

Conversions



Ample LPG supply at point of use enables the farmer to save time for field work.

Mobile Conversion-Service Shop Gives Farmers Fast Changeovers

THE Central San Joaquin Valley, in California, is a recognized "hot spot" for butane-propane conversions. They exist there by the thousands, running trucks, tractors, water well pumps, and various kinds of specialized harvesting, processing, and industrial equipment. During the past 18 years, one firm, Winther Bros., has installed more than a million dollars' worth of carburetion conversions!

This development has taken place through a fortunate combination of a rich agricultural territory, a long growing season re-

By **CARL ABELL**

quiring much power work, a convenient supply of low cost LP-Gas, and a man outstanding in his ability to develop this field of activity.

The man is Paul Holcomb, head of the butane carburetion division of Winther Bros., a great sprawling automotive service organization occupying a half-block site on the edge of the automotive district in Fresno.

Winther Bros., now operated by the sons of the men for whom the firm was named, was one of the



Winther Bros. two installation-service trucks and portable welder take engine conversion service wherever it is needed. Left to right: Oscar Bell, Enos Lee, Arnold Wallace, Arthur Lighton.

What one automotive service organization did for butane-propane distributors:

Solved carburetion problems and made installations for dealers in seven counties.

Popularized internal combustion engine use of LPG to present volume of 10,000,000 gallons.

Paved way for dealers to sell engine fuel to present domestic customers and to sell domestic gas to farms buying conversions.

Helped dealers to a better summer-winter ratio.

Sold a million dollars worth of conversion equipment in 18 years!

early day general garages. In the course of time various franchises were acquired, such as United Motors, Carter and Zenith carburetors, AC spark plugs, and all the clutch, brake, axle, electric, and other service and accessory lines which go to make up the modern automotive service and parts business. They were quick to see the advantages of handling truck service and parts, and by the early 1930's they had lined up agencies for many of the better service lines in the truck field. In 1933 they became one of the first Ensign carburetor distributors, with a franchise covering a block of seven counties centering around Fresno, and extending for about 60 miles each way up and down the valley.

Paul Holcomb, who was then a young tune-up mechanic in the Winther shop, became enthused over the results which he saw in the butane-powered trucks which were serviced in the shop. It seemed to him that butane should be good fuel for tractors as well as for trucks. He found that a few tractors had been converted around

the country, largely as an accommodation for farmers and contractors who were operating their trucks on butane. But the results had been good. Why not go after tractor conversions in a businesslike way? The Winther brothers



Well testing engine, converted by Winther Bros. This Packard marine engine, without its supercharger, develops 500 hp, and burns 60 gallons of propane per hour.

were willing to try the idea, so Paul started to promote tractor conversions, and almost immediately bumped up against his first major problem.

Because of the large amount of tractor work required in irrigated farming, the tractors could not be spared for any extended period throughout most of the year, and the owners could seldom take the



Special regulator test bench in Winther shop. Enos Lee makes the adjustments.

time to bring the machines to town and pick them up after the conversion was complete. But a tractor could usually be laid up for a day, if the work could be done at the ranch. This required complete preparation in advance—all parts, units, and fittings assembled, tanks and brackets made up, supplies of all necessary materials on hand, and every tool that would be needed gathered together. And a Coleman lantern was indispensable. All

this added up to a considerable load. Paul's "Model A" had to be fitted with overload springs.

As business grew, and tractors of various makes were converted all over the surrounding country, it became necessary to answer service calls. Paul frequently found that the engine would not run right without a new spark plug, or a new magneto impulse starter, or some such unforeseen replacement. Going back to the shop from another county, or even to the nearest garage, consumed too much time, so it became necessary to carry quite a stock of service parts. There wasn't enough space in the Model A.

It also became apparent that a gas welding outfit, and a portable electric generator to supply lights for night work and to operate a power drill whenever needed, would save a great deal of time and many long trips. The introductory period had been tough, but after four years of pioneering, business was getting good. Adequate equipment could make it better and more profitable. So the firm bought a 1938 Chevrolet panel delivery truck.

Paul equipped this truck as a portable shop and parts department. The workbench and parts bins occupied all the space along both walls of the body. With the parts and equipment on board, it was thereafter possible to make any installation, or to handle any service call relating to performance or operation of any butane-equipped engine.

In addition to the portable electric power plant and the gas weld-

NOW **CENTURY** **CARBURETION**



IS LISTED...



Top honors have been awarded Century Carburetors again and again in truck and bus tests. And now a new example of the merits of Century Units is, gained by recognition from the Underwriters' Laboratories, Inc.

The UL seal indicates that Century Carburetion has met the rigid standards of this group by passing extensive endurance, freezing, accelerated aging and extraction tests and others. Century is proud to carry the UL seal.

**SET IT
SEAL IT
AND FORGET IT**

CENTURY

Oldest Manufacturer of LP-Gas Carburetion
CENTURY GAS EQUIPMENT CO.
11188 LONG BEACH BLVD., LYNWOOD, CALIF.

Sold only through distributors or to original equipment manufacturers

CARBURETORS for LP-Gas



Workbench, parts bins, and portable light plant in the larger installation-service truck. Oscar Bell tests a regulator.

ing outfit, the truck's equipment included the electric drill, an air-fuel-ratio analyzer, electric tachometer, vacuum and pressure gauges, coil and condenser tester, electric timing light, water manometer, and low-reading pressure gauge, vise, hand tools, and regulator test stand. An air compressor would have been useful, but the space for

this was not available, so the pressure for the test stand was taken from the LP-Gas tank which supplied fuel for the truck engine.

Parts stock on the truck comprised more than 3000 items, including a full line of tractor and truck spark plugs, standard ignition parts, parts for carburetors and regulators, nuts, bolts, copper tubes and fittings, and practically all of the tune-up service parts without which engines will not run. Since tractor magnetos are subject to failure, and must be returned to the central shop for overhaul, spare magnetos and a complete line of magneto couplings were also carried in the truck.

This original truck, operating on LP-Gas, has now gone 330,000 miles, and it still looks and runs well. Its first engine ran 186,000 miles without a rebore or new pistons, rings, or bearings. The radiator hose dropped off one day, and as a result of the overheating the head cracked. To get the truck back in service without delay, a new engine was installed. This is still in use, and has never required internal repairs.

While the "service at the ranch" business was thriving on a diet of farm engine conversions, the volume of truck conversions at the home shop was also increasing. A special service bench complete with regulator rebuilding and testing equipment was added, and a section of the parts department was set aside for butane carburetors and parts. Service parts for other leading LP-Gas carburetors and regulators were added, and a man was

for the small agricultural tractor

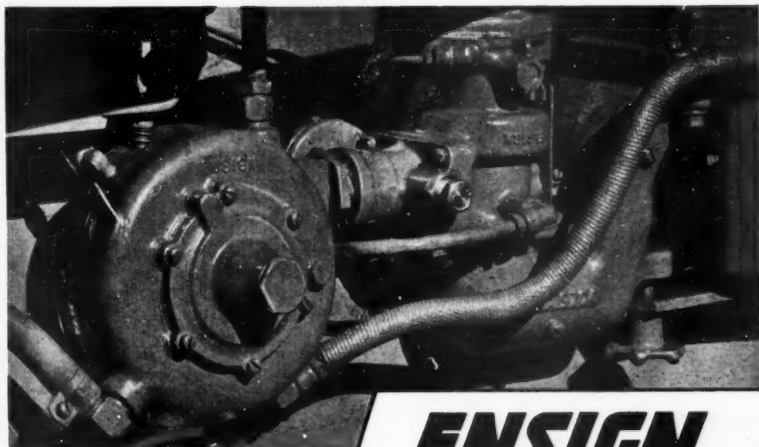
ENSIGN

LP-GAS CARBURETOR

Ensign's New Model "W" Vaporizing and Regulating Unit and Model "Xg" Carburetor

Here's a fast-selling LP-Gas carburetor and vaporizer assembly for small tractors and power units. It is simple, rugged and easy to install. Foolproof, easy to adjust and to service, every detail of the new Ensign Model "W" Vaporizer and "Xg" Carburetor has behind it nearly forty years of carburetor experience.

Illustrated here is the new J. I. Case Model "DC" LP-Gas Tractor, factory equipped with the Ensign "W" and "Xg." You too will find this equipment excellent in performance and readily accepted in the field. Insist on Ensign—take no substitute. It will pay you in the long run.



ENSIGN

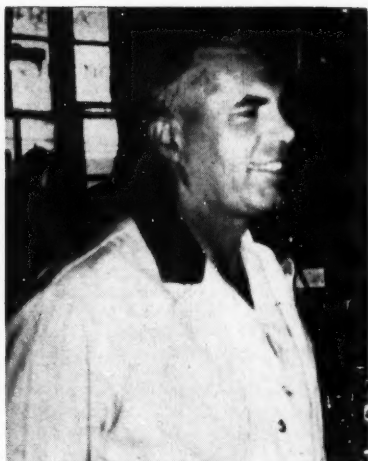
CARBURETOR COMPANY



7010 S. Alameda, P. O. Box 229
Huntington Park, California



2330 W. 58th St., Chicago 36, Illinois



Paul Holcomb, who developed the installation-service truck plan for Winther Bros.

trained and assigned to full-time work in the new department.

Most successful automotive service businesses have exchange deals available on many of the operating units, such as gasoline carburetors, magnetos, power brake mechanisms, etc., which can be quickly replaced but require considerable time to repair or rebuild. LP-Gas regulators fall in that same category. Winther Bros. carry a complete stock of rebuilt regulators for exchange, so engines requiring regulator work may be re-equipped in minimum time. The units which have been removed are completely reconditioned, including disassembly, cleaning, replacement of all worn parts, reassembly, testing, and painting. The rebuilt units

look and operate the same as they did when new.

Many operating procedures and short-cuts have been developed which speed up conversions and make the work easier. For example, tractor manifolds which must be cut apart for cooling are handled on the same basis as the exchange regulators. A prepared manifold goes out with the truck on the installation trip, and is exchanged for the regular hot manifold which was on the engine. The latter manifold is then taken to the shop and made ready for the next job.

The Winther conversion includes high compressioning of the engine, whenever conditions permit. A large assortment of pistons and heads is carried in stock for this purpose. Heads are exchanged, if possible, in cases where the increase in compression is accomplished by planing the stock heads. Then the head that was removed is planed, cleaned inside and out, painted, and put in stock for the next job.

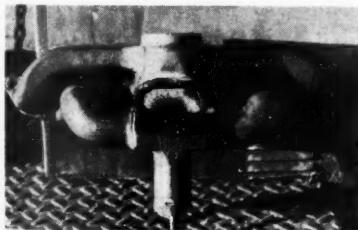
Tractor fuel tanks are made up locally to Winther's own specifications, which include welded-on plates and brackets to be bolted direct to the tractor structure. In the case of the "Farmall M," which is used to power the McCormick-Deering cotton picker, the rear bracket is made in two pieces, so the tank may be mounted in the regular position on the tractor for ordinary farm use, and moved to the back of the cotton picker when the tractor is used to power that machine. They have converted

hundreds of these cotton picker units.

In the course of time Holcomb discovered that the Hesselman type diesel engine which was used for a number of years in Allis-Chalmers tractors made an exceptionally good butane conversion. The power was materially increased, and of course the operator got the benefit of smoother operation and reduced engine maintenance. A large number of these tractors had been sold in the Fresno area. Paul claims that he has converted all of them to LP-Gas.

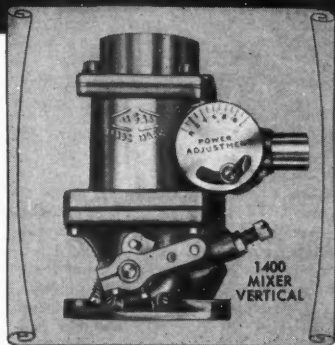
Holcomb now heads a department employing six full-time men. A second "parts and installation" truck has been added, this one nearly twice as large as the original Chevrolet. It contains the same basic equipment, with more parts and more working space. A trailer-mounted electric welding outfit is also available, and may be pulled behind either truck, as needed.

Developing this large amount of business has not been as easy as it sounds. Back in the early years,



Farmall manifolds, cut apart and ready to install on the next job.

IMPROVED ENGINEERING AND ADVANCED DESIGN



Brings Greater Flexibility to ALGAS Carburetors

Pioneers in the LP-Gas Industry, ALGAS is constantly improving their equipment to serve better the expanding needs of their field. Now ALGAS offers a new, improved design in their 1400 Series Mixers that greatly expands the flexibility of installation. Write today for information and specifications.

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Specializes in
Everything for
Butane-Propane
Industry

CARBURETION AND
CONVERSION EQPMT

SERVICE STATIONS

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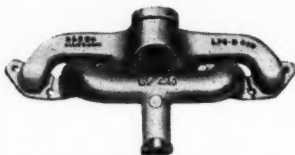
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AMERICAN LIQUID GAS CORPORATION

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LP-GAS MANIFOLDS

for Farm Tractors



One of the most complete lines of manifolds designed for LP-Gas. Models available for John Deere, International, Allis Chalmers, Case, Ford & Ford Ferguson and others available soon. These manifolds are much colder than a regular gasoline manifold, saves fuel and increases horse power. Get top performance with every conversion. Send for dealers price sheet.

CANFIELD SUPPLY CO. Fairfield, Iowa



Mr. LPG Dealer

Our material allocation has been increased! We can now ship carburetion units for most make and model engines from stock . . . place your order now.

DIX MANUFACTURING CO.

3447 E. Pico Blvd., Los Angeles 23, Calif.

Export: 301 Clay St., San Francisco

when butane carburetion was new, both the idea and the equipment had to be "sold" to farmers, who are notably skeptical of new mechanical developments. After they were convinced, the job of conversion had to be done without interfering with the necessary farming operations, and with minimum loss of tractor time. Many a conversion was finished in the small hours of the morning, working in the glare and heavy shadows of the gasoline lantern.

Advertising Has Played Part

Advertising of almost every kind has been employed to help build business. Three prominent signs on the sides of the building fronting the highway call attention to the butane carburetor service. The two trucks and the portable welder are practically rolling billboards. Full page space is frequently taken in the farm magazine section of the Fresno newspapers, which provide excellent circulation all over that part of the valley.

Advertising brings some inquiries, and helps to create a receptive frame of mind in prospects who will not take the trouble to inquire. It makes selling easier, but a great deal of personal contact is still necessary. Paul could not do it alone, but he had "trading stock" with which to enlist help. When he made a conversion for a farmer who did not use LP-Gas in his household, it became a new account for some fuel distributor. It was but one additional step to show this distributor how he could increase his summer volume by selling the carburetion idea to other

farmers who already were or were not being supplied with domestic fuel. Soon many of the distributors were making carburetion sales, and calling on Paul to make the installations.

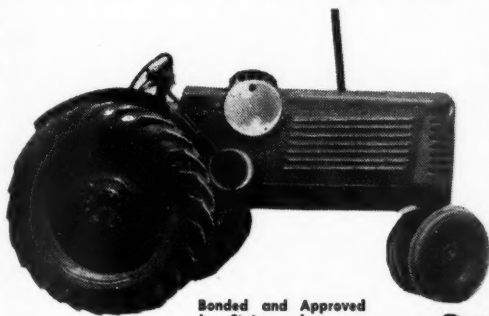
Being in a strictly neutral position, and with stock, facilities and experience which few gas distributors could hope to equal, it has been possible for Winther Bros. to work out cooperative deals with most of the gas distributors in the territory. There are more than 20 of these distributors in the seven counties which Winther serves. Few of them install carburetion equipment, but they all promote its sale and use. Their business is

gas, and Winther's business is carburetion. It is a team play. With both working to help each other, they have done a job that would have taken much longer had either undertaken to do it alone.

Small Business Is Backbone

Largely as the result of this cooperative selling, many important ranch accounts have been secured, particularly in the Tulare Lake Basin, 60 miles to the south. Here one large cotton farm uses more than 80 converted tractors and trucks. There are many other large farm operations in this same area, and along the west side of the valley, where 15 or more en-

MANCHESTER TRACTOR TANKS *give Custom Conversion*



Bonded and Approved
in States where re-
quired.

*Operating safety and savings
are the result of Manchester's
field experience with all types
of mobile equipment.*

For the type tractor illustrated they provide a neat streamlined appearance. The driver has unimpaired vision for all types of work. Tanks come equipped with mounting brackets and hood supports. Installation time is reduced to an absolute minimum.

All valves are UL approved and conform to all industry standards. Custom designed Manchester tanks with suitable mounting brackets are available for all makes and models of trucks and tractors. They are machine welded and manufactured by production line methods for uniform strength, dependable service and finished appearance.



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2880 Norton Ave., Lynwood, Cal.
Phones: NE 1-9357 NE 6-2839



Hundreds of successful L-P installations have proved the effectiveness of Ellis "Bu-Power" Manifolds. More power and mileage for your customers . . . and more customers for you. Every conversion is a better conversion when you use an Ellis Manifold designed especially for L-P gas.

Contact your Ellis Dist. today for further details.

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HERE IS THE WAY TO..**

**balance your
gas load!**

the

Garretson
SYSTEM OF LP-GAS
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Corp., Roswell, N. M.
Liquefied Gas Corp.,
Boise, Idaho

Parlett Gas Co.,
Waldorf, Md.
Tama Distributors,
Inc., Memphis
Tilden Engineering,
Fresno, Calif.
Town & Country Gas
Co., Sioux Falls, S.D.
Universal Corp.,
Columbia, S. C.
Valley Industries,
Mt. Pleasant, Iowa

gines have been converted. Impressive as these big operations are, the backbone of the business has been the hundreds of small farmers, with one or two engines to convert. On a great many of these accounts, the LP-Gas distributors have done the selling, and then called Paul to make the conversions.

Have Installed 5000 Carburetors

More than 5000 butane-propane carburetion installations have been made by the Winther crew during the past 18 years. Most of them are still in operation. The present rate of installation is more than one per working day. A total of more than a million dollars has been received for the sale of conversions. The volume of service work which goes through the shop is likewise impressive and profitable.

Average fuel consumption per tractor in this area is close to 2000 gallons per year. Converted trucks generally consume a great deal more. Winther-installed conversions now consume close to 10,000,000 gallons of LP-Gas per year. Probably half of it goes through the tractor engines, the other half in trucks, and helps to fill up the summer slump for the dealers. By putting the butane-propane carburetion business on a service basis comparable to other important automotive components, Winther Bros. and Paul Holcomb have built an outstanding record for themselves, and have been of inestimable service to the LP-Gas industry of central California.

Taxis Offer Fertile Field For Conversions by LPG Dealers

The taxicab industry is rapidly increasing in importance as a potential market for LP-Gas. A dozen or more fleets have been converted, and are reporting a substantial saving in the cost of fuel and in engine maintenance. Trial installations have been made in a few vehicles in many more fleets.

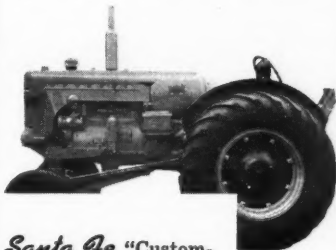
Interest in the subject has been so great that propane carburetion dominated the program at the recent American Taxicab Assn. convention.

With 125,000 taxis operating in more than 7000 fleets serving cities and towns, the opportunity to cash in on this business is available to almost every gas dealer.

The principal problems of the taxi fleet operators in connection with conversion center around securing a satisfactory supply of fuel at a convenient location. Not all of them will be able to have their own storage and dispensing equipment, due to local ordinances and other obstructions. The larger fleets can handle their own installations after being properly instructed by the carburetion equipment representatives. Smaller fleets will generally rely on dealer or other shops for installation and service.

The ATA Journal, which goes to the 6400 members of the American Taxicab Association, has been promoting the propane carburetion idea in its editorial columns for several months. A similar, prolonged campaign for the installation of two-way radiophone installations, which this magazine started in 1946, has paid off. It is believed that there are now more than 30,000 of these communication sets now in use in taxicabs. This indicates that the support of the industry magazine can be a potent force in supporting the sales efforts of LP-Gas carburetion dealers.

Santa Fe "Custom-Built" L-P GAS TANKS FOR TRACTORS AND TRUCKS



Santa Fe "Custom-Built" LP-Gas Fuel Tanks are specified as standard equipment by many tractor manufacturers. They are available for any Tractor, Truck or Bus requirement.

Designed for fast, simple and inexpensive installation. Many stock models are available, including brackets—others are fabricated to specifications. They are licensed and bonded in states where required. Tanks comply with N.B.F.U. requirements. U.L. approved valves—excess flow protection.

Highest standards of engineering, materials and workmanship.

Write for specifications and counsel

Santa Fe Engineering &
Equipment Co.

MAYWOOD, CALIFORNIA, 3810 Fruitland Ave.
TULSA, OKLAHOMA, 2830 Sand Springs Road

The Trade

Its 50th year of operation was celebrated by **Butler Manufacturing Co.** in December with an open house at its headquarters in Kansas City, Mo.

The company started in 1901 by manufacturing galvanized steel tanks for watering cattle. Now, in addition to fabricating storage and truck and trailer tanks for the L. P. Gas industry, Butler manufactures well casings, wagon tanks, tank heaters, grain bins, steel buildings, and dry-cleaning equipment.

Butler plants are located in Minneapolis, Birmingham, Ala., Richmond, Calif., and Galesburg, Ill., in addition to the home office in Kansas City.

During the company's celebration, Oscar D. Nelson, president, announced

the appointment of John A. Morgan to the post of general manager. In his new position, Mr. Morgan will be making policy decisions affecting all phases of the company's operations and will continue to work closely with Mr. Nelson.

A brochure, with many detailed photographs, has been issued by **Trinity Steel Co., Inc.**, Dallas, describing the production of its line of "Eveready" LPG systems.

The picture story shows such production jobs as precision cutting of steel, automatic welding of seams, machine-crimping of edges, machine fitting of heads onto tank shells under hydrostatic pressure, buffing weld splatter and mill scale by motor-driven metal brush, and truck load orders of systems ready for delivery.

American Meter Co. has announced the appointment of Donald C. Holtz as manager of the new Dallas orifice meter assembly plant and warehouse.

Mr. Holtz was first employed at the Erie factory of American Meter in 1935 and was engaged in production work until 1940. Prior to his appointment as manager, he was employed as an engineer in the orifice meter department of the Erie factory.

Ruud Manufacturing Co., Pittsburgh, lost a prominent executive when Richard H. Lewis died Nov. 13 after a short illness. He was 73. Mr. Lewis was president of the firm from



John A. Morgan (left), new general manager, and Oscar D. Nelson, president, **Butler Manufacturing Co.**



A. G. Johnson (far left), Weatherhead research engineer, explains details of the company's new 2- $\frac{3}{4}$ in. regulator to an interested audience including (left to right) C. W. Vogt, Weatherhead sales representative, Fred Larson, Shell Oil Co.'s chief engineer; and W. H. Harper, acting sales manager of Weatherhead's LP gas equipment division.

1944 until September, 1951, at which time he became chairman of the board of directors' executive committee.

His first job with Ruud, in 1914, was as Iowa sales representative. Four years later he was named Detroit manager and, in 1925, general sales manager. Subsequently he became secretary and treasurer, vice president, and vice president and general manager. He had been a member of the board for 23 years and was formerly a member of the American Gas Assn. board.

Taylor G. Nelson, formerly vice president and sales manager of the Titan Valve Co., Cleveland, has been appointed Eastern sales manager for the appliance controls division of Minneapolis-Honeywell Regulator Co., it is announced by John E. Haines, vice president.

He will be located in Honeywell's Cleveland office, and will have re-

sponsibility for the sale of water heater controls and other products of the division, except space heating controls, in the area east of the Mississippi, plus states bordering the Mississippi on the west.

Thomas V. Scott, well known sales manager of The Weatherhead Co.'s L. P. gas equipment division, is now temporarily located in Washington, D.C., on loan to the General Components Division of National Production Authority, according to a recent announcement by Albert J. Weatherhead, Jr., president of Weatherhead, Cleveland, Ohio.

As Chief of the Tubular Fittings Section, Valves and Fittings Branch, Mr. Scott will be responsible for allocation of materials for aircraft fittings, compressed gas cylinders, valves and all brass fittings.

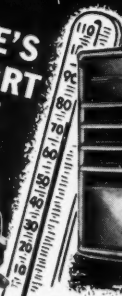
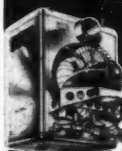
Mr. Scott began his N.P.A. duties on November 1 and it is expected

REZNOR

world's largest selling gas unit heater

Hung from ceiling or mounted on floor

THERE'S
COMFORT
HERE



because...

... MORE DEALERS HAVE
SOLD MORE REZNOR UNITS
THAN ANY SIMILAR MAKE

People choose Reznor because Reznor does the heating job they want at a price that means economy. They trust Reznor quality because they know Reznor. Dealers choose Reznor because it's the most accepted unit for all types of gases. It means profit and customer goodwill. Do you know Reznor? Ask for catalog.

REZNOR MANUFACTURING CO.

4 UNION ST. - MERCER, PENNA.

Send me 20-page catalog in full color

Name _____

Firm _____

Address _____

City _____ Zone _____ State _____

This advertisement appears in Collier's and The Saturday Evening Post.

that he will remain in Washington for a period of six months.

William H. "Bill" Harper has been appointed acting sales manager during Mr. Scott's absence.

It is also announced that James H. (Jim) Williams has been promoted to the position of district manager of Weatherhead's Dallas, Texas, warehouse, from where he will serve dealers, distributors and tank fabricators in Texas, Oklahoma and Louisiana with all types of Weatherhead LPG equipment.



M. G. PURPUS

Henry A. Ruysser, Jr., vice president and general sales manager of Black, Sivalls & Bryson, Inc., has announced the appointment of M. G. Purpus as sales manager, special products division.

Mr. Purpus will supervise the sales departments handling propane systems and welded tanks. In addition, he will serve as administrative assistant to the general sales manager.

J. Phillips Cosgrove, executive vice president of American Radiator & Standard Sanitary Corp., died Dec. 13 in New York after a brief illness.

Mr. Cosgrove, 54, began his career with American-Standard as a machinist in the plant of the American Radiator Co. In 1929, the year American Radiator merged with Standard Sanitary Manufacturing Co. to become the present company, Mr. Cosgrove was appointed export manager. Since then he has served as director of European divisions, vice president in charge of foreign divisions, execu-

We've Solved the Condensation Problem in Gas Burning Tank Heaters!

A drain-plug at the base of the heater—it's as simple as that! The improved Siebring tank heaters now bring you and your customers this practical solution to the unavoidable condensation that occurs in any gas burning tank heater. Just connect a hose from the heater drain-plug to the tank drain-plug and the condensation drains away.

This new feature makes Siebring heaters the most dependable gas burning stock tank heaters on the market! The peak of your sales season is coming. See your jobber or write for prices today!

FOR GREATER FUEL ECONOMY in severe weather, recommend that your customers use a Siebring "weatherproof" hood over the draft stack.

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George, Iowa

NOW
SIEBRING
Gas Burning
TANK HEATERS
are equipped with
a
DRAIN-PLUG
for
EASY REMOVAL
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Model SGAH (illustrated)
Self-sinking — 100% auto-
matic with thermostatic
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*This Beauty
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15 Beautiful Models for ALL KINDS
OF GAS.

Backed by 93 years of expert crafts-
manship and the integrity of an
honored firm.

Write for catalog and full
particulars on the PROFITABLE
ENTERPRISE Line.

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NASHVILLE, TENN. • ESTABLISHED 1858

TAKING ORDERS!



Liquefied Petroleum Gas Cities Service Oil Co.

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A DEPENDABLE SOURCE
UNIFORM PRODUCTS
A CAPABLE SUPPLIER
TWENTY YEARS' EXPERIENCE

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IN LP GAS ALSO

CITIES SERVICE
MEANS
GOOD SERVICE

•

CITIES SERVICE OIL CO. (Del.)

•

BARTLESVILLE, OKLA.
CHICAGO, ILL.

Other Sales Offices

Cleveland
St. Paul

Kansas City
Toronto

tive vice president, member of the board of directors, and has served on the executive committee.



GEORGE MILLER

Appointment of George Miller as advertising director of Caloric Stove Corp. is announced by Julius Klein, president.

Operating out of Caloric's Philadelphia headquarters, Mr. Miller also is directing operations of a complete advertising department at the company's Topton, Pa., plant.

Charles Smith has been named manager of the A. O. Smith Corp. product service division at Chicago, succeeding J. W. Spoor, who was named general sales manager of the company's welding products division.

P. H. Fahrer, former manager of the Los Angeles product service branch, moves to Chicago as Mr. Smith's assistant. Succeeding Mr. Fahrer as Los Angeles manager is George Carlson, formerly assistant of the Union, N. J., branch.

R. S. Rheem, president of Rheem Manufacturing Co., has announced the formation of a new division of the company to be known as Rheem International, and the election of A. L. Walker as vice president to head up the new operations.

Rheem International will operate all of the overseas investments of Rheem Manufacturing Co. and will also handle all sales of Rheem products abroad. The company at present has affiliated manufacturing companies in Argentina, Australia, Bra-

PETROLANE

Experience and "know-how" are great assets in the L.P.G. business. Bill Bonner, our Division Manager in the Sacramento Valley, is a man possessing both of these qualities. Bill has been with us for most of the 12 years he has been in the industry and we like him very much. We know you will like him too.



WILLIAM M. BONNER

— L. P. G. Corporation —

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CALIFORNIA

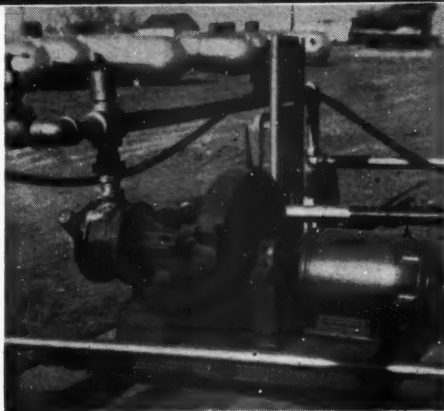
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For fast, safe transfer of LP-Gas, see the complete line of Viking bulk plant pumps. 5, 10, 20, 30 and 55 gpm sizes available. Also included are truck mounting pumps and a hand drive model.



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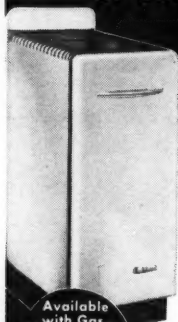
VIKING PUMP CO.
CEDAR FALLS, IOWA



JANUARY — 1952

145

It's New!
Burns Either City GAS
or Bottled GAS



Available
with Gas,
Blue Flame Oil,
Pot Type Oil, or
3-Type Solid
Fuel Firebox

Oakland's
**New Gas
Kitchen Heater
makes
BUYERS
out of
LOOKERS**

25,000 BTU's crowded
into barely two square
feet of floor space.

Top griddle surface makes
dandy auxiliary cooking area
for pancakes or chops.

... and because it's an Oakland,
here's quick capacity for

HEAT
More **HEAT**
and More **HEAT**

... and THAT'S what your
customers come to buy!

SEND for full information on the Complete
Oakland line!
Oakland Foundry Co. Belleville, Ill.
2016 Avenue A
Without obligation, please send me FREE
information on Oakland Kitchen Heaters
and Oakland Circulating Heaters.

Name _____ State _____
Address _____
City _____



Oakland
Foundry Co.

zil, Canada, Italy, Peru, Singapore
and the United Kingdom, operating
a total of 12 plants. Rheem has sales
agencies in 38 countries.

Rheem also announces the appoint-
ment of William S. Rheem as man-
ager of the South Gate, Calif., plant;
Lloyd Simonson as manager of the
Sparrows Point, Md., plant and Harry
H. Filler as manager of the Bayonne
and the new Linden, N. J., plants.

William S. Rheem is the son of
Richard S. Rheem, president and co-
founder of the company.

William C. Brooks has been ap-
pointed assistant regional manager
of appliance sales for the western
region of Rheem. Mr. Brooks will
have his headquarters in the com-
pany's South Gate, Calif. office, where
he will work in association with R. E.
James.

The appointment of seven new Tap-
pan Stove Co. sales representatives
have been announced by D. S. Sharp,
sales manager.

Jack Bland will represent the firm
in southwestern Texas.

Representing Tappan in Missouri
will be R. J. Rowlands.

In Cleveland, J. W. Phillips will
replace E. T. Prendergast as sales
representative to all Tappan dealers
east of 9th St., and R. R. Myers,
formerly with the gas range division
of the Grand Home Appliance Co.,
will contact Tappan dealers west of
9th St.

D. D. Carlson will represent the
firm in northern California.

L. A. Carducci is the Tappan rep-
resentative in the territory compris-
ing parts of New York, New Jersey,
and Connecticut.

S. A. Hanner will cover a territory
made up of counties in Texas and
Louisiana.

New eastern regional manager for
Servel, Inc., is Gordon J. Malone, who

BUTANE-PROPANE News

Let's COOPERATE

Because of steel allocations, DOWNINGTOWN may have to limit the fabrication of Butane-Propane Tanks. However, we will be glad to receive your inquiry and, at that time, determine if the tanks can be produced in a mutually satisfactory manner.



DOWNINGTOWN IRON WORKS, INC.
DOWNINGTOWN, PA.
STEEL & ALLOY PLATE FABRICATION
HEAT EXCHANGERS

NEW YORK OFFICE:

30 CHURCH STREET

These OAKES



No. 1560-G

GAS BROODERS offer EXTRA VOLUME in LP Sales

The economical dependable performance of this OAKES No. 1560-G Gas Brooder under all conditions, has made it the choice of thousands of poultrymen. Commercial Broiler raisers using the floor brooding plan say it satisfies every requirement.

Broods 450-500 Chicks

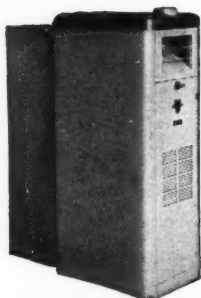
Air circulation between insulated deflector and top of drum eliminates all condensation—no wet litter. Burner and Pilot completely enclosed—no fire hazard. Automatic temperature controls. Regulator at edge of canopy. Easy to install.

See your Oakes jobber. Write for free catalog and literature.

OAKES MFG. CO. • Box 068-P • TIPTON, IND.

for Natural or LP Gas

Popular with
Poultrymen
from Coast
to Coast
Thousands
Now in use
LOW FUEL COST



Amazing New Two-in-One Furnace

Eliminates duplicate stock Closet or basement . . . factory assembled, compact package. Forced air heating for every application. Write for complete details.



The QUALITY line of Forced Air, Gravity, Floor and Commercial Furnaces and Water Heaters.

SECURITY MFG. CO.

1630 Oakland Ave.
Kansas City 3, Missouri



Mallinckrodt
**ETHYL
MERCAPTAN**
purified

it says LOOK OUT

- The accepted standard odorant for natural or liquefied petroleum gas—gives sure but harmless warning.
- Purified—Moisture-free—PROTECTS FIXTURES. Meets all 15 qualifications of National Bureau of Standards.



MALLINCKRODT
CHEMICAL WORKS

Mallinckrodt St., St. Louis 7, Mo.
72 Gold St., New York 8, New York

was formerly district sales manager in Philadelphia. Headquartering in New York, Mr. Malone will cover Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, the District of Columbia, and parts of Ohio and West Virginia.

Succeeding Mr. Malone in Philadelphia will be Ray J. Pask who has been manager of Servel's Detroit sales branch since its opening in March, 1950.

Eclipse Fuel Engineering Co., Rockford, Ill., manufacturer of industrial gas-burning equipment, has announced that M. K. Griggs Co., Houston, Texas, is company representative for the Houston area.

Principals of the Griggs company are M. K. Griggs and B. W. Wallin.

H. W. Milner has been named manager, special accounts division of Bryant Heater Div., according to J. N. Crawford, director of sales.

Mr. Milner, formerly of the Stewart-Warner Corp., will be located at Bryant's headquarters in Cleveland, Ohio.

Wilbur E. Lunger, formerly assistant vice president in the production department of American Car & Foundry Co., has been elected a vice president.

He will work with R. W. Ward, vice president in charge of production.

Willard H. Mixter has been named vice president and general manager of H. R. Basford Co., San Francisco, northern California distributors of a wide line of appliances.

In making the announcement George Egleston, company president, also

Butane & Propane

Carter

Producers of high quality
Liquefied Petroleum Gases Since 1931
Wholesale Only

THE CARTER OIL COMPANY
T U L S A , O K L A H O M A

HEMISPHERICAL HEADS

FOR STORAGE TANKS AND UNFIRED PRESSURE VESSELS

API-ASME CODE

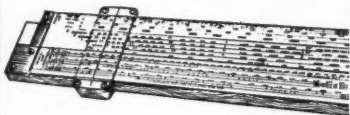
One Piece Type in 16"- 28" Outside Diameter
37"- 38"- 40 $\frac{1}{2}$ "- 48" Inside Diameter

Segmental Type in 57 $\frac{1}{2}$ "- 60 $\frac{1}{2}$ "
76 $\frac{1}{2}$ "- 126" Inside Diameter

Write for our Tank Head Catalog

THE COMMERCIAL SHEARING & STAMPING CO.
P. O. Box 719 Youngstown, Ohio

HEATING calculator



Designed especially for dealers in residential heating equipment. Gives fast, accurate answers on BTU heat loss per room and for entire house; CFM requirements for forced warm air, gravity 200° and 175° heating units; square feet of steam or hot water radiation required. Also determines pipe area; pipe, stack and blower sizes for forced warm air and gravity 200° and 175° systems. Line loss, GAS, coal and oil burner sizes, cost of heating per season easily figured. Quick and easy to learn; comes complete with step-by-step instruction booklet. Send \$15 cash, check or money order to Climatemaker, Dept. 801, Box 378, Bloomington, Ill., or write for informative booklet. Jobbers, Manufacturers' Reps: Write for special offer.

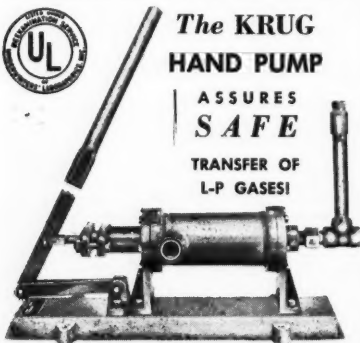
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The KRUG HAND PUMP

ASSURES
SAFE

TRANSFER OF
L-P GASES!



PROTECT YOUR CUSTOMERS!

Suggest the easy to operate KRUG HAND PUMP. Its proven economy means profitable sales for you.

SEE YOUR DISTRIBUTOR FOR FULL INFORMATION
OR SEND A POSTCARD TO

D. H. KRUG COMPANY

DEPT. 50, MADISON, SOUTH DAKOTA

told of the appointment of J. T. Templeton as vice president and assistant to the president. Other promotions include George Dickie, from supervisor of electrical department to general sales manager, and Maurey Carley became supervisor of the electrical department.

The election of William T. Briggs as vice president and Eastern sales manager of the John Wood Co., heater and tank division, was recently



WM. T. BRIGGS

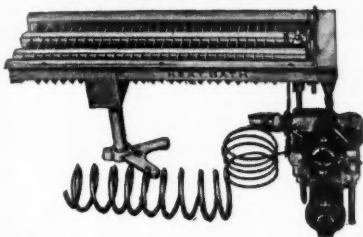
announced by R. W. Simpson, vice president and general sales manager.

Mr. Briggs is well known for his promotional and sales work throughout the plumbing supply, appliance and utility fields and has been associated with the John Wood Co. since 1940. In 1948 he was promoted to Middle Atlantic district sales manager and in 1949, Eastern sales manager.

The appointment of R. B. Hoover as "Janitrol" sales engineer in the northern Indiana territory is announced by H. C. Gurney, sales manager of the Janitrol domestic-commercial division of Surface Combustion Corp.

Mr. Hoover will make his headquarters in the Janitrol district office in the American Bank Bldg., Sheri-

THE NEW LINE
Heatbath
CONVERSION BURNERS



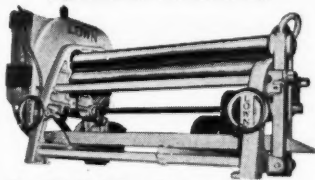
LPD-30 for Propane Gas • 30,000 B.T.U.'s
A burner for straight Butane or Propane
gases for kitchen heating. Capacity up to
36,000 B.T.U.'s per hour.
Designed for coal, combination and bungalow
ranges. Quickly installed and guaranteed fool-
proof.

*Few territories open. Write for
descriptive literature and prices.*
HEATBATH APPLIANCES, INC.

P. O. Box 78

Springfield 1, Mass.

LOWN SLIP ROLL
FORMING MACHINES



- Initial Pinch-Type Driven
- Top Roll 7" Diameter—Lower Rolls 6½"
- Capacity, Model B-774, ¼" Mild Steel
6' wide.
- Available in longer or shorter lengths
- Oilite Bearings, Alemite Lubrication
- Roll Position Indicators
- Power Adjustment on rear Roll & Air
Cylinder For Operation of Drop Arm, if
desired.
- Fast sturdy and easy to operate
- Prompt Deliveries
- Other Size Machines also Available

Dealers in Principal Cities. Write for Bulletins

**SAN ANGELO FOUNDRY & MACHINE
COMPANY**
SAN ANGELO, TEXAS 1000 EAST UPTON

From Oregon to Maine—From Florida
into Canada LP-Gas Dealers find this
BAKER Alcohol PUMP
the simple answer to moisture problems

Holds 4 gallons
of Alcohol. Is
hydraulically de-
signed to force alcohol
into any size cylinder
against any propane-bu-
tane pressure. This means
that when a regulator
freezes up, just take your
Baker pump and give the
moisture contaminated tank
a shot of alcohol and the
job is done. Many con-
cerns are equipping each
delivery truck with a
Baker Pump. Economically
priced at \$39.50 com-
plete with fittings. Send your order today to

BAKER ENGINEERING, Malone, N. Y.

a bottle gas tank heater

THE Broyhill HANDI-HEATER

**Fits any Tank . .
Lights Easily!**

**The Most Foolproof Stock
Tank on the Market
Today!**

ECONOMICAL—Operates on
a few cents per day.

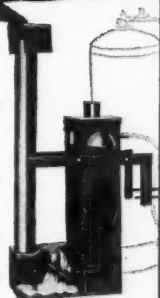
PROFIT BUILDER—Extra
livestock gains soon pay for
investment.

SAFE—A. G. A. approved
Automatic shut-off valve.

DEPENDABLE—Tested in BROYHILL'S below zero
test lab.

PROVEN—On hundreds of farms.

THE Broyhill COMPANY
DAKOTA CITY, NEBRASKA



Announcing:

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COMPLETE
POWER
HANDBOOK**



This is a Gold Mine for you!
LP-Gas Conversions are here.
Cash in by getting the "know-how" NOW. 400 pages packed with easy-to-follow explanations and crystal-clear drawings.

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NO MONEY NOW!

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**Amazing New
Two-in-One
Furnace**

Eliminates duplicate stock! Closet or basement . . . factory assembled, compact package. Forced air heating for every application. Write for complete details.

SECURITY
GAS FIRED PRODUCTS

The QUALITY line of Forced Air, Gravity, Floor and Commercial Furnaces and Water Heaters.

SECURITY MFG. CO.

1630 Oakland Ave.
Kansas City 3, Missouri



dan, Ind. He will be associated with R. A. Caylor, district manager.

C. W. Bondurant has been appointed sales manager of **The Titan Valve & Manufacturing Co.**, Cleveland, Ohio, manufacturers of controls for water heaters and other appliances.

Mr. Bondurant, who has been with the company for many years, was formerly chief development engineer.

Appointment of **Ray F. DeVaney** as sales manager of domestic heating equipment of the South Wind division of **Stewart-Warner Corp.** has been announced by **W. E. Judd**, general sales manager of the division in Indianapolis, Ind.

Milwaukee Gas Specialty Co., Milwaukee, Wis., named the Gas Equipment Co. of Denver an authorized parts and replacement depot of its line of Baso equipment. **W. N. McMillen** heads the Denver company.

Walter Wehner, manager of the application selling department of **American Radiator & Standard Sanitary Corp.**, died suddenly in Newark, N. J., Dec. 19.

Mr. Wehner, 47, lived in Pittsburgh, Pa.

He became associated with **American-Standard** in 1927.

Five regional managers have been appointed by **Rockwell Manufacturing Co.** in accordance with the company's plans for country-wide reorganization of its sales department, according to Vice President **L. A. Dixon**.

M. J. Harper, with headquarters in New York City, will be in charge of the Eastern region. The Central region will be supervised by **P. C. Kreuch**, from his headquarters in Pittsburgh. The Southern region,

headed by J. W. Northcutt, has its offices in Atlanta, Ga.

The Midwestern region will be supervised by C. K. Madison with offices in Houston. H. Boezinger, Los Angeles, is manager of the Western region.

The Protane Corp., Erie, Pa., has named K. Spencer Buall treasurer of the firm, according to H. N. Forman, president. Mr. Buall recently served as an officer in the treasurer-controller department of the Carborundum Co. of Niagara Falls, N. Y.

In his 71st year, Alfred Polland Brill, pioneer gas water heater executive, died in Pittsburgh, Pa., on Dec. 11.

An early associate of inventor Edwin Ruud, Mr. Brill joined Ruud Co. in 1902. Progressing through the offices of secretary and treasurer and vice president, he succeeded Mr. Ruud as president in 1932, became board chairman in 1944, and retired in 1945.

A. G. Zumbrun, Sr., president of Brunner Manufacturing Co., has announced the following appointments:

G. W. Mathews, retiring as New York City district manager, will be succeeded by J. W. Thomas, formerly Brunner sales manager. Mr. Mathews will retain his position as a member of the board of directors.

Frank C. Hawk has been named director of sales.

O. Ross McDonald, advertising and sales promotional manager for the past 11 years, was named to the new post of public relations officer. C. M. Hatcher succeeds Mr. McDonald as advertising manager.

William Stom, a member of the Brunner engineering staff for several years, has been promoted to chief application engineer.

First See
GRIFFITHS
for
Conversion Parts

We can supply a wide assortment of spuds, orifices and other parts for converting domestic and commercial equipment to any type gas. Also, a complete line of repair parts for all types of gas meters.

Write for catalog.

**E. F. GRIFFITHS
COMPANY**

350 E. Walnut Lane, Philadelphia 44, Pa.

*Serving the Gas Industries
For Over 40 Years*

NOTHING SAFER THAN

Tite Seal

FOR LP-GAS CONNECTIONS

THE PERFECT SEALING COMPOUND

ABSOLUTELY LEAKPROOF

BRUSH-ON

WON'T HARDEN OR CRACK

NO THREAD SEIZURE

LIQUID TYPE NON-HARDENING GASKET & JOINT SEALING COMPOUND

RADIATOR SPECIALTY COMPANY
CHARLOTTE, NORTH CAROLINA

Classified advertising is set in 6 point type, without border or display, at the rate of 15 cents per word per insertion, minimum charge per insertion \$3. Box numbers for replies count as 5 words. Count as a word each one letter word and each group of figures. Classified advertising is only accepted when payment accompanies order. Copy and payment must reach publisher's office prior to 10th of month preceding publication.

HELP WANTED

WANTED — EXPERIENCED SERVICE and installer to work on LP appliances with a well established firm in western Kansas. Steady employment, good salary if you can qualify. Answer in own handwriting to Box 555, *BUTANE-PROPANE News*, 198 So. Alvarado, Los Angeles, Calif.

WANTED—MANAGER FOR NEW LP bulk plant in central Illinois. Must be experienced in sales, service and operation of LP gas. Give age, marital status, experience, salary desired and references, in letter to Box 560, *BUTANE-PROPANE News*, 198 So. Alvarado, Los Angeles, Calif.

SITUATIONS WANTED

EXPERIENCED LP GAS MAN DESIRES responsible position as manager. Thoroughly familiar with all phases of L. P. gas distribution, domestic, industrial and commercial. Capable of handling office, sales and service. Best of references, free to travel. Interview can be arranged. Write to Box 565, *BUTANE-PROPANE News*, 198 So. Alvarado, Los Angeles, Calif.

FORMER MANAGER L. P. GAS AND appliance business with well rounded experience in plant operation, truck, pump, equipment and appliance sales, service, desires offer from established firm. Age 45. Excellent references. Box 570, *BUTANE-PROPANE News*, 198 So. Alvarado, Los Angeles, Calif.

BUSINESS OPPORTUNITIES OFFERED

FOR SALE—A BUSINESS PAYING dividends in Kansas. 3 propane trucks. 320 100# cylinders. 3 delivery trucks. Storage and pumps. Building with warehouse and office space. With or without inventory. Located in a good thriving community. Make us an offer. Box 575, *BUTANE-PROPANE News*, 198 So. Alvarado, Los Angeles, Calif.

BUSINESS OPPORTUNITIES OFFERED—Cont.

PROSPEROUS PROPANE BUSINESS located in middle-west. 2000 customers, over 1,000,000 gallons yearly. New building, three new bulk trucks, plus miscellaneous equipment. Over \$500,000 sales annually. No blue sky. Statement from banker showing ability to pay \$100,000 necessary before any inquiries will be answered. Box 520, *BUTANE-PROPANE News*, 198 So. Alvarado, Los Angeles, Calif.

TANK, BOTTLE AND APPLIANCE business. Good trade territory in progressive Colorado town on Denver-Wyoming highway. New store building and fixtures, propane truck, pickup. Wonderful opportunity for man who wants his own business. M. E. Davie, 80 Circle Drive, Fort Collins, Colo.

FOR SALE—WELL ENTRENCHED southeastern Missouri metered retail group of properties. Equipment mostly company owned. Earnings unusually high. Deal involves over half million. Write Box 500, *BUTANE-PROPANE News*, 198 So. Alvarado, Los Angeles, Calif.

BUSINESS OPPORTUNITIES WANTED

MANUFACTURERS' REPRESENTATIVE covering New England heating and bottled gas trade wants first class specialty items with sales features. We need a gas fired suspended unit heater. Will pioneer for right products. Northeast Utilities Equipment Corp., 77 South St., Stamford, Ct.

WANTED TO BUY—SMALL BULK GAS business in southern California. 1 or 2 man operation. Give particulars. Reply to Box 540, *BUTANE-PROPANE News*, 198 So. Alvarado, Los Angeles, Calif.